ORDER NO. KM40205868C1

F12

Service Manual

Telephone Equipment

Caller ID Compatible

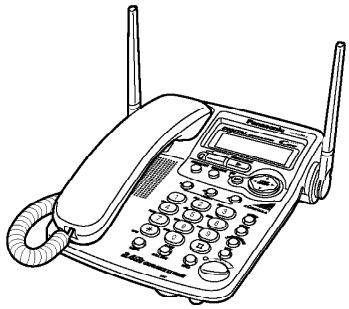
KX-TG2584S

2.4GHz Cordless Answering System

Silver Version

(for U.S.A.)

(Cordless Handset)



(Base Unit)

(Charger)

SPECIFICATIONS

SPECIFICATIONS

	Base Unit	Cordless Handset	Charger
Power Source:	AC Adaptor (PQLV10Z, 120 V AC, 60 Hz)	Rechargeable Ni-cd battery (3.6 V, 850 mAh)	AC Adaptor (KX-TCA1-G, 120 V AC 60 Hz)
Receiving Frequency:	24 channels within 2.4015 - 2.4705 GHz	24 channels within 2.4015 - 2.4705 GHz	
Receiving Method:	Direct conversion	Direct conversion	
Transmitting Frequency:	24 channels within 2.4015~2.4705 GHz	24 channels within 2.4015~2.4705 GHz	
Oscillation Method:	PLL synthesizer	PLL synthesizer	
Tolerance of OSC Frequency:	24 MHz ± 720 Hz	24 MHz ± 720 Hz	
Modulation Method:	NA (FSK/SS)	NA (FSK/SS)	
Spread spectrum Method:	Direct sequence	Direct sequence	
Chip rate	15 chip	15 chip	
ID Code:	22-bit	22-bit	
Security Codes:	1,000,000	1,000,000	
Dial Mode:	Tone (DTMF)/Pulse	Tone (DTMF)/Pulse	
Redial:	Up to 32 digits	Up to 32 digits	
Speed Dialer:	Up to 22 digits	Up to 22 digits	
Power Consumption:	Standby: Approx. 4.5 W Maximum: Approx. 7.0 W	11 days at Standby, 4.5 hours at Talk (maximum)	Standby: Approx. 1.0 W Maximum: Approx. 4.0 W
Operating Environment:	5 °C - 40 °C (41 °F - 104 °F)	5 °C - 40 °C (41 °F - 104 °F)	
Dimension (H × W × D):	$3^{17}/_{32}$" × $7^{9}/_{16}$" × $8^{1}/_{4}$" (90 × 192 × 210 mm)	$1^{15}/_{32}$" × $2^{9}/_{32}$" × $8^{17}/_{32}$" (37 × 58 × 217 mm)	$2^{7}/_{8}$" × $3^{11}/_{16}$" × $3^{31}/_{32}$" (73 × 94 × 101 mm)
Weight	1.59 lbs. (720 g)	0.49 lbs. (220 g)	0.35 lbs. (160 g)

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

When you mention the serial number, write down all 11 digits. The serial number may be found on the label affixed to the bottom of the unit.

FOR SERVICE TECHNICIANS

ICs and LSIs are vulnerable to static electricity.
When replacing, the following precautions will help prevent recurring malfunctions.
1. Cover the plastic parts boxes with aluminum foil.
2. Ground the soldering irons.
3. Use a conductive mat on the work table.
4. Do not grasp IC or LSI pins with bare fingers.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's Instructions.

1. BATTERY

1.1. Battery information

After your Panasonic battery is fully charged:

Operation		Approx. battery life
While in use (TALK)	near the base unit*	Up to 4.5 hours
	away from the base unit	Up to 3.5 hours
While not in use (Standby)		Up to 11 days

* Within about 10 feet (3 m)

- Battery life may be shortened depending on usage conditions, such as viewing the Caller ID Caller List or directory list, and ambient temperature.
- **Clean the handset and the base unit charge contacts with a soft, dry cloth. Clean if the unit is subject to grease, dust or high humidity.** Otherwise the battery may not charge properly.
- If the battery is fully charged, you do not have to place the handset on the base unit until "Recharge battery" is displayed and/or "[▮]" flashes. This will maximize the battery life.
- The battery cannot be overcharged.

1.2. Battery strength

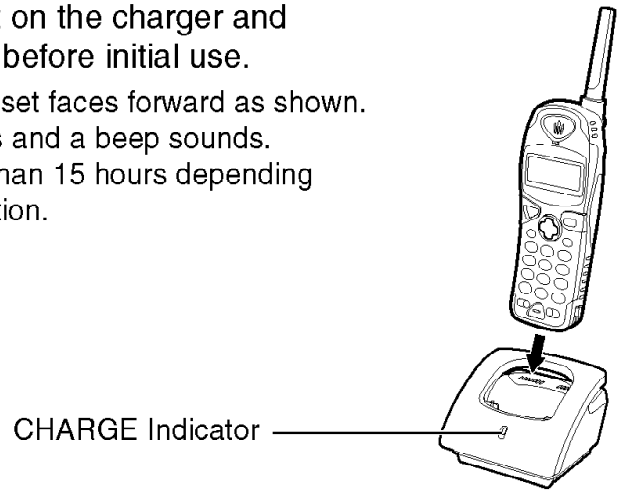
You can check the battery strength on the cordless handset display.
The battery strength is as shown in the chart below.

Display prompt	Battery strength
[▮▮▮]	Fully charged
[▮▮]	Medium
[▮]	Low
[▮] (flashing)	Needs to be recharged.

1.3. Battery Charge

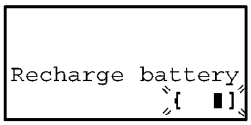
Place the cordless handset on the charger and charge for about **15 hours** before initial use.

- Make sure the cordless handset faces forward as shown.
- The CHARGE indicator lights and a beep sounds.
- Charge time may be longer than 15 hours depending on circumstance noise condition.



1.4. Recharge

Recharge the battery when:
– "Recharge battery" is displayed.
– "[▮]" flashes on the display, or
– the cordless handset beeps intermittently while it is in use.



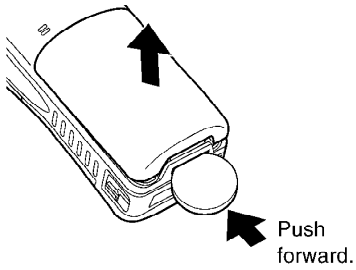
- If you DO NOT recharge the cordless handset battery for more than 15 minutes, the display will continually indicating "Recharge battery" and/or "[▮]" will continue to flash when the cordless handset is lifted off the charger.

Note for Service:
The battery strength may not be indicated correctly if the battery is disconnected and connected again, even after it is fully charged.
In that case, by recharging the battery as mentioned above, you will get a correct indication of the battery strength.

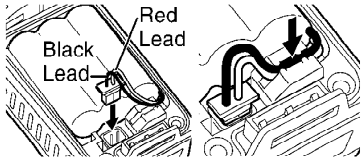
1.5. Battery Replacement

If "Recharge battery" is displayed and/or "[▮]" flashes after a few telephone calls even if the battery was fully charged, replace the battery with a new Panasonic PQP510SVC (P-P510) battery.

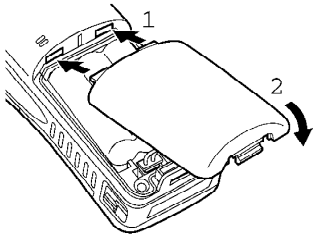
1 **Carefully** insert a flat metal object in the slot, and push forward to release the lock. Remove the cordless handset cover.



2 Replace the battery. Then place the battery leads inside the groove, otherwise the leads may be damaged when closing the cover.



3 Close the cover.

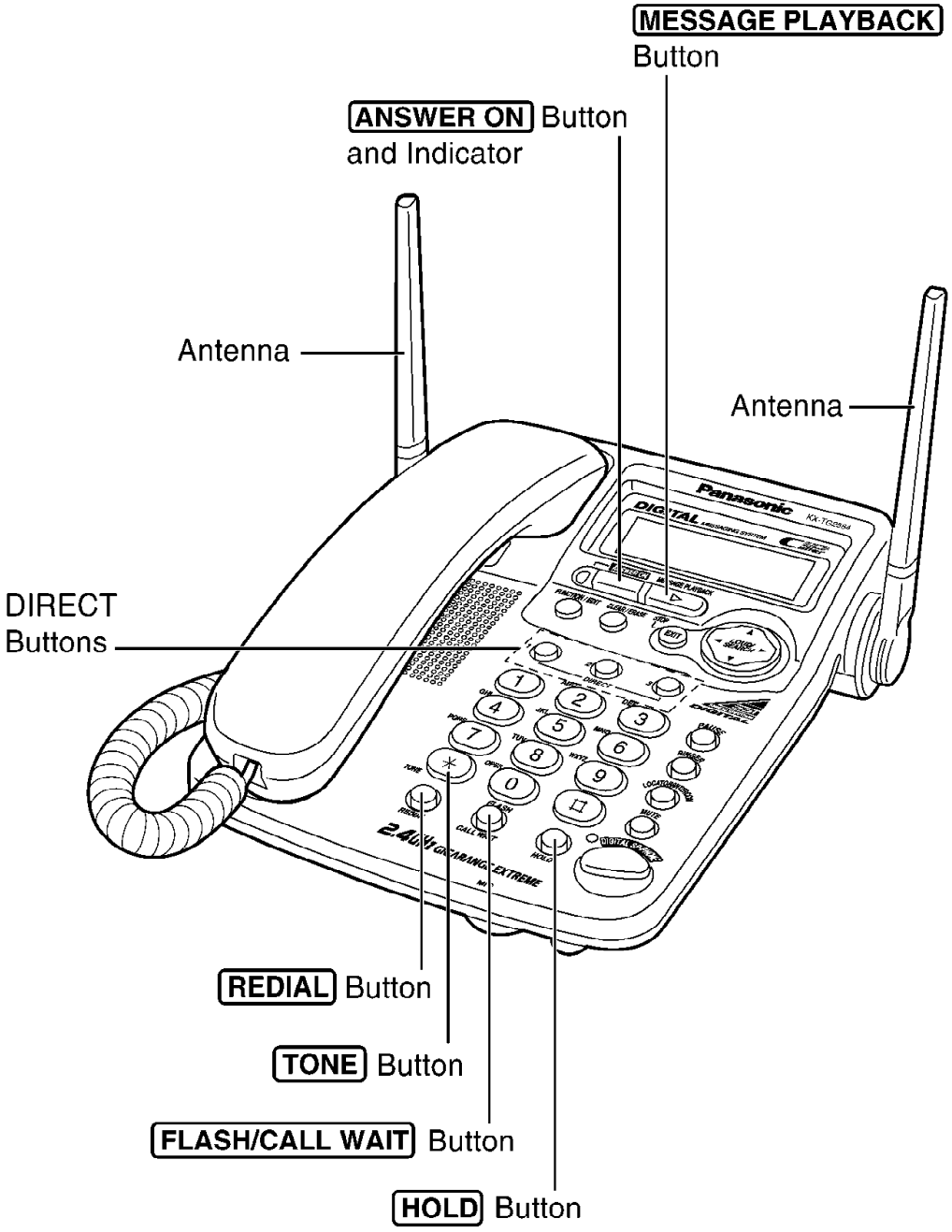


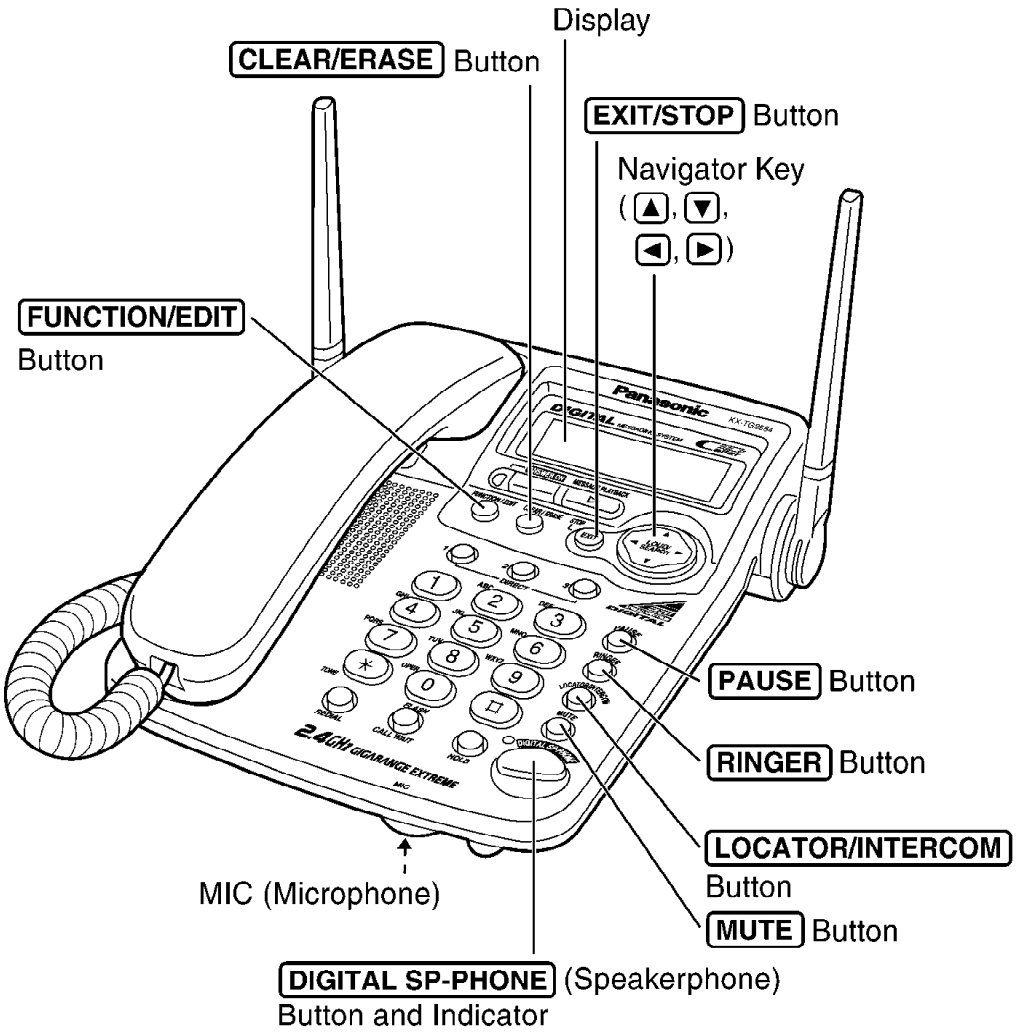
4 Make sure you charge the new battery for about 15 hours in order to display the battery strength prompt correctly.

A nickel cadmium battery that is recyclable powers the product you have purchased. At the end of its useful life, under various state and local laws, it is illegal to dispose of this battery into your municipal waste stream. Please call 1-800-8-BATTERY for information on how to recycle this battery.

2. LOCATION OF CONTROLS

2.1. Base unit


MESSAGE PLAYBACK Button
ANSWER ON Button and Indicator
Antenna
Antenna
DIRECT Buttons
REDIAL Button
TONE Button
FLASH/CALL WAIT Button
HOLD Button

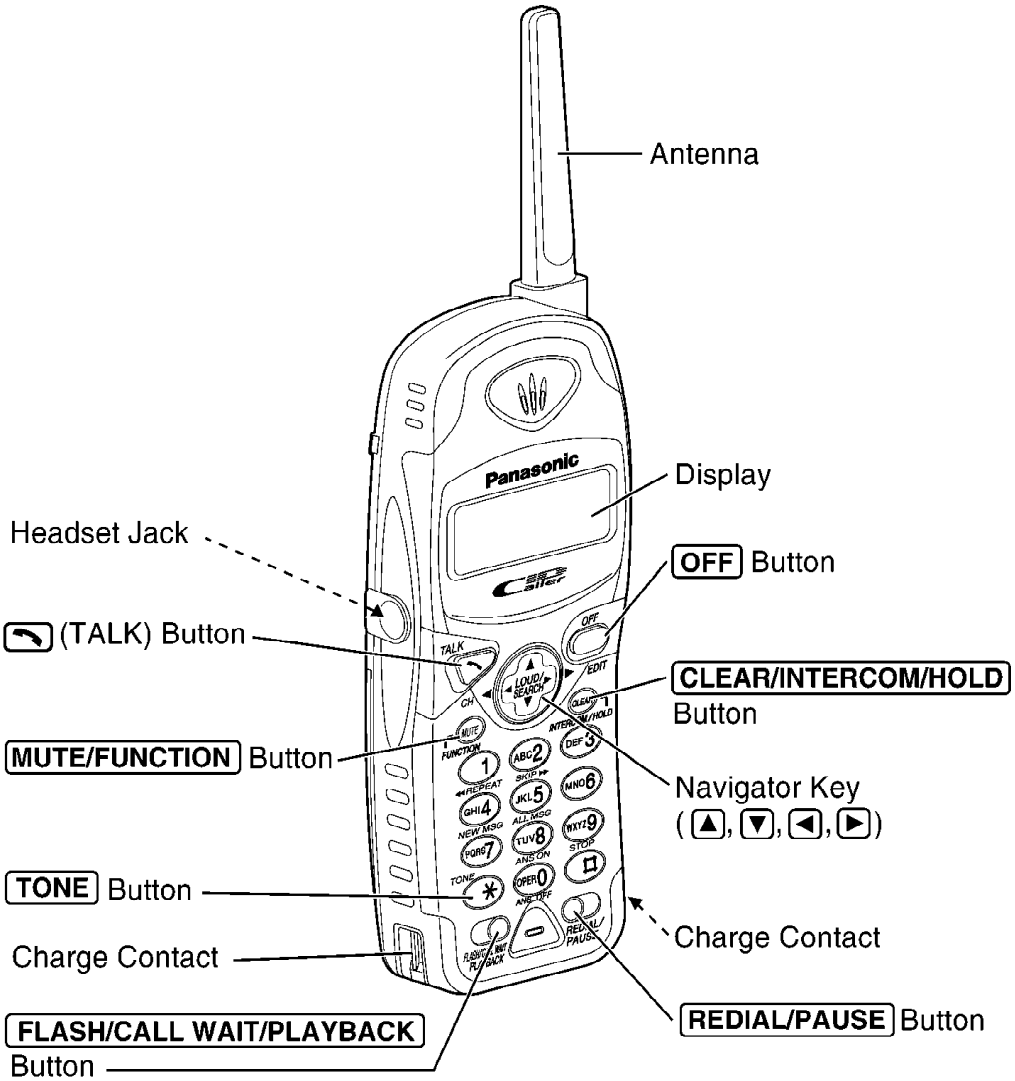


How to use the Navigator key:
This key has four active areas that are indicated by arrows.

- Pressing the up and down arrows allows you to enter the Caller List and scroll through the function menu, the Caller List and the directory list. They are also used to adjust the handset and speaker volumes.
- Pressing the right and left arrows allows you to enter the directory list.
- Pressing the right arrow allows you to select or confirm your menu choices and to skip a message. Pressing the left arrow allows you to repeat a message.

Throughout this Service Manual, the navigator key is indicated by the arrows ▼, ▲, ◄ or ►.

2.2. Cordless handset

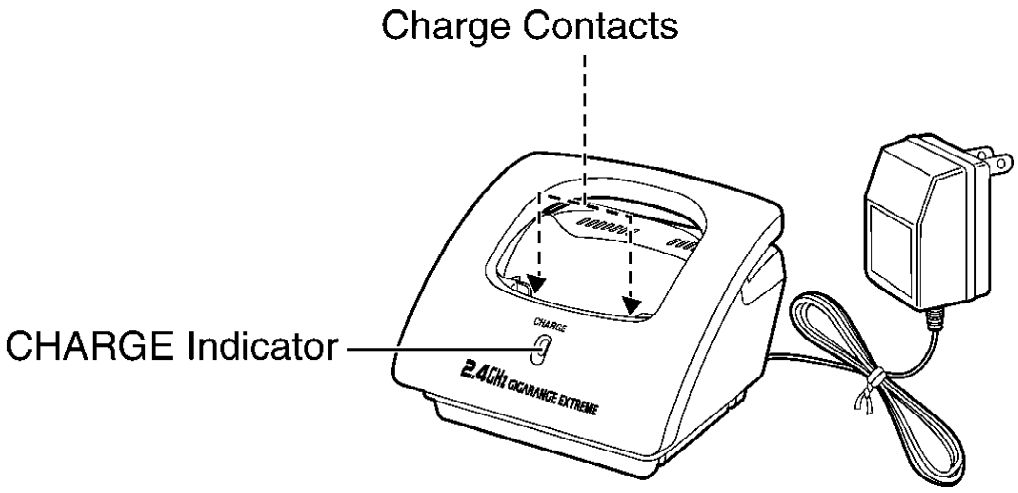


How to use the Navigator key:
This key has four active areas that are indicated by arrows.

- Pressing the up and down arrows allows you to enter the Caller List and scroll through the function menu, the Caller List and the directory list. They are also used to adjust the cordless handset receiver volume.
- Pressing the right and left arrows allows you to enter the directory list and move the cursor when entering directory items.
- The right arrow is used to select or confirm your menu choices and to edit a phone number of the Caller List into one of 3 patterns.
  The left arrow is used to select a clearer channel.

Throughout this Service Manual, the navigator key is indicated by the arrows ▼, ▲, ◀ or ▶.

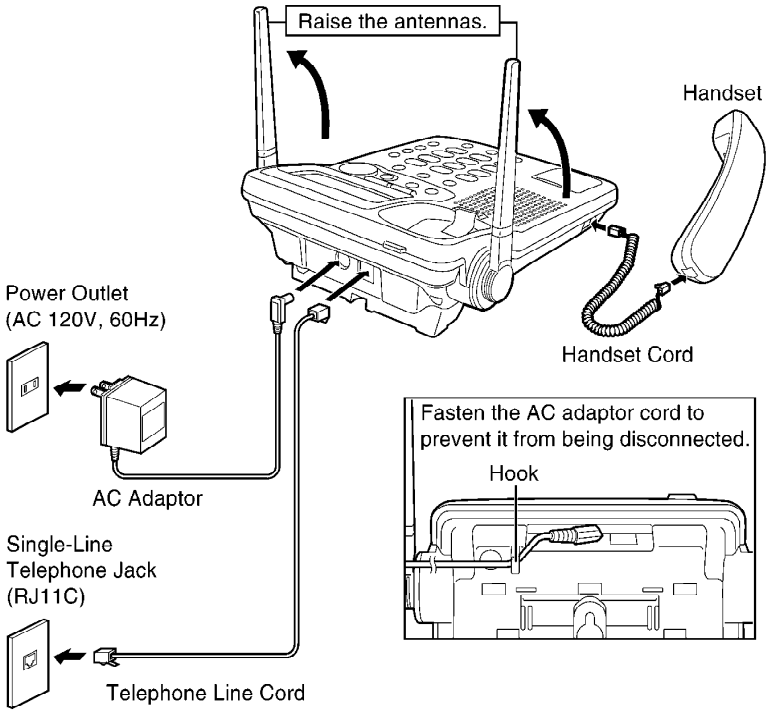
2.3. Charger



3. SETTINGS

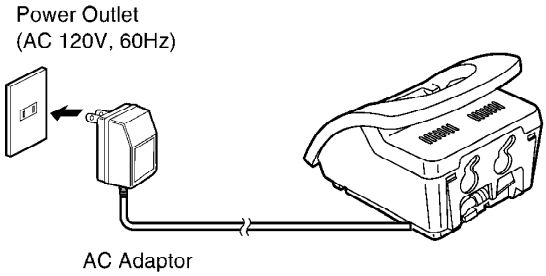
3.1. Connections

3.1.1. Base unit



- USE ONLY WITH Panasonic AC ADAPTOR PQLV10Z.
- The AC adaptor must remain connected at all times. (It is normal for the adaptor to feel warm during use.)
- Use only a Panasonic Handset for the KX-TG2584S.
- If your unit is connected to a PBX which does not support Caller ID services, you cannot access those services.

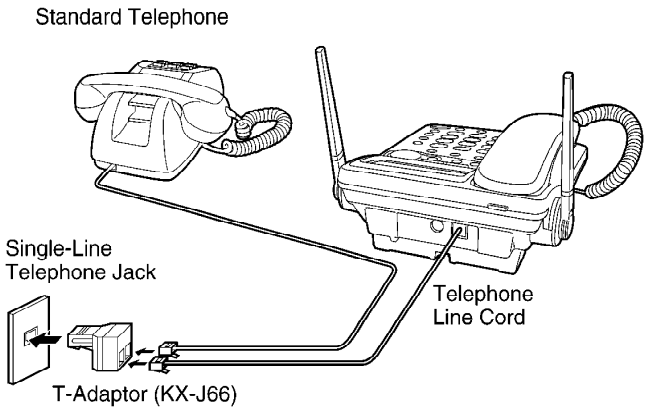
3.1.2. Charger unit



- Use only WITH Panasonic AC ADAPTOR KX-TCA1-G.
- The AC adaptor must remain connected at all times.
  (It is normal for the adaptor to feelwarm during use.)

3.2. Adding Another Phone

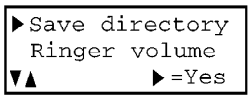
This unit will not function during a power failure. To connect a standard telephone on the same line, use the Panasonic T-adaptor KX-J66.



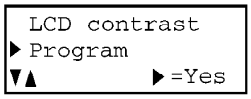
3.3. Dialing Mode (Cordless Handset only)

You can program the dialing mode **using the cordless handset near the base unit.** If you have touch tone service, set to "Tone". If rotary or pulse service is used, set to "Tone". Your phone comes from the factory set to "Tone".
Make sure the base unit and cordless handset are not being used.

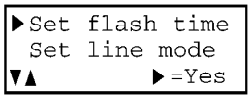
1 Press MUTE/FUNCTION.



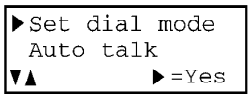
2 Scroll to "Program" by pressing ▼ or ▲.



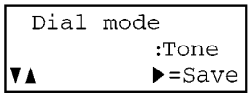
3 Press ▶ (Yes key).



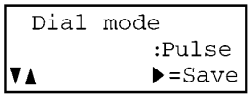
4 Scroll to "Set dial mode" by pressing ▼ or ▲.



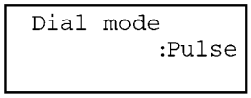
5 Press ▶ (Yes key).



6 Select "Pulse" or "Tone" by pressing ▼ or ▲.



7 Press ▶ (Save key).
- A beep sounds.
- To exit the programming mode, press OFF.

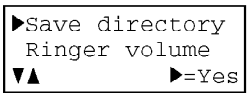


- You can exit the programming mode any time by pressing OFF.

3.4. Line Mode (Cordless Handset only)

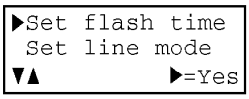
You can program the line mode **using the cordless handset near the base unit**. If the line is connected to a low voltage system such as a PBX, set to "B". Otherwise the Call Waiting Caller ID Feature may not be used. Your phone comes from the factory set to "A".
Make sure the base unit and cordless handset are not being used.

1 Press [MUTE/FUNCTION].

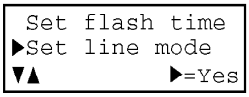


2 Scroll to "Program" by pressing [▼] or [▲].

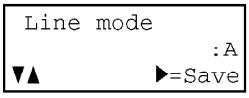
3 Press [▶] (Yes key).



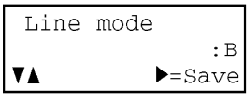
4 Scroll to "Set line mode" by pressing [▼] or [▲].



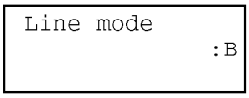
5 Press [▶] (Yes key).



6 Select "B" or "A" by pressing [▼] or [▲].



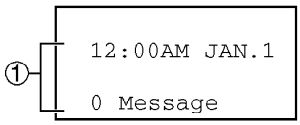
7 Press [▶] (Save key).
- A beep sounds.
- To exit the programming mode, press [OFF].



- You can exit the programming mode any time by pressing [OFF].

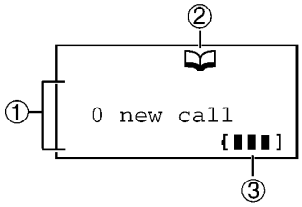
4. DISPLAYS

4.1. Base unit



① The time and date and the number of incoming messages are displayed while the unit is not in use.
The display shows the dialed number, call status, programming options and directory items etc.
If you subscribe to a Caller ID service, caller information will be displayed.
The number of new calls will also be displayed.

4.2. Cordless handset



①The display shows the dialed number, call status, programming options and directory items etc. If you subscribe to a Caller ID service, caller information will be displayed. The number of new calls will also be displayed.

②The directory icon displays when storing or viewing the directory items.

③The battery icon indicates the battery strength.

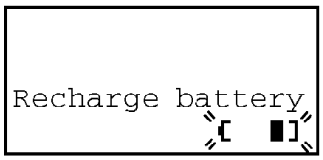
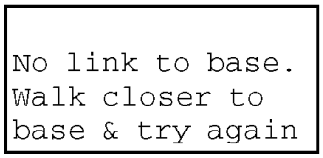
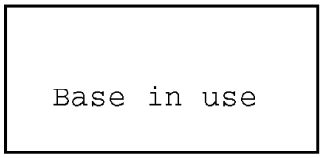
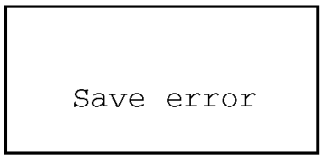
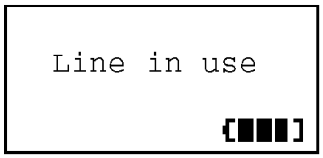
4.3. Troubleshooting

If the unit detects a problem, one of the following messages will be displayed on the cordless handset or the base unit.

4.3.1. Base unit display

12:00AM JAN. 1 0 message	When the clock needs adjusting, the time and date flashes. Adjust the clock.
Greeting record Recording error	Your greeting message was not recorded correctly. Record it again.
12:00AM JAN. 1 Message full	If the message memory is full, "Message full" will flash. Erase some, or all, of the messages.
Line in use	The display will be shown while the cordless handset is engaged in an outside call.
Portable in use	While the cordless handset was being used, ▼ or ▲ was pressed to search the Caller List/directory list or FUNCTION/EDIT, CLEAR/ERASE, or MESSAGE PLAYBACK, was pressed.

4.3.2. Cordless handset display

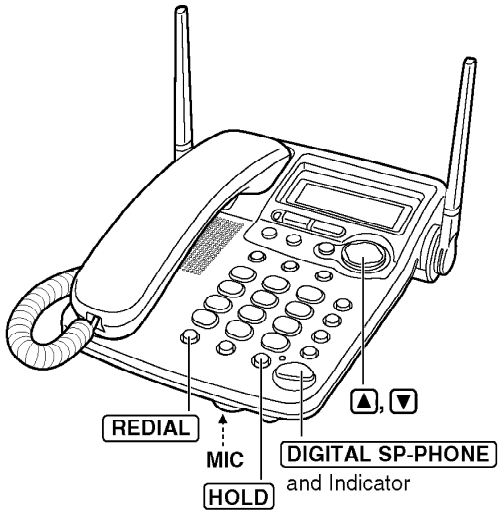
	The battery needs to be charged. Place the cordless handset on the charger to charge the battery.
	The cordless handset has lost communication with the base unit. Move closer to the base unit and try again.
	When trying to store an item or Caller List information in the directory, the directory memory is full.
	While the base unit was being used, ▼ or ▲ was pressed to search the Caller List/directory list, ▶ was pressed to select an option, or CLEAR/INTERCOM/HOLD or FLASH/CALL WAIT/PLAYBACK was pressed.
	While storing items in the directory, the cordless handset has lost communication with the base unit. Move closer to the base unit and try again.
	The display will be shown while the base unit is engaged in an outside call.

5. OPERATIONS

5.1. Making Calls

5.1.1. Base unit

You can make a call by simply lifting the handset and dialing the phone number.
To hang up, place the handset on the cradle.



Using the speakerphone

1 Press DIGITAL SP-PHONE.
- The indicator lights.

```
Talk
```

2 Dial a telephone number.
- The dialed number is displayed.
- After a few seconds, the display will show the length of the call.

```
Talk
1112222
```

3 When the other party answers, talk into the **MIC** (microphone).

```
Talk
00-00-00
```

4 To hang up, press DIGITAL SP-PHONE.
- The indicator light goes out.

```
Off
00-01-08
```

- "Line in use" is displayed on the cordless handset while the base unit is engaged in an outside call.

To redial the last number dialed

Lift the handset or press DIGITAL SP-PHONE ➡ REDIAL.

Hands-free Digital Duplex Speakerphone

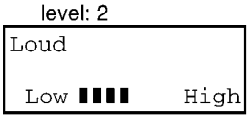
- For best speaker performance, use in a quiet room and talk alternately with the caller.
- If the other party has difficulty hearing you, press ▼ to decrease the speaker volume. Decreasing the speaker volume will increase the microphone sensitivity.
- You can switch to the handset by lifting it up. To switch back to the speakerphone, press **DIGITAL SP-PHONE**.

To adjust the handset volume (3 levels) or speaker volume (8 levels) while talking

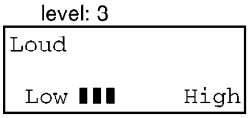
To increase, press ▲.
To decrease, press ▼.

- The display shows the volume level for a few seconds.

Ex. Handset volume level: 2



Ex. Speaker volume level: 3



To put a call on hold

Press **HOLD**.

"Line on HOLD." is displayed on the cordless handset.

- The DIGITAL SP-PHONE indicator flashes.
- If using the handset, you can place it on the cradle.
- If you put a call on hold for more than 6 minutes, an alarm tone will sound. The call will be disconnected after a total of 10 minutes.

To release the hold

From the base unit:
—when using the speakerphone, press **DIGITAL SP-PHONE** or lift the handset.
—when using the handset, press **HOLD**.
From the cordless handset, press ☎.

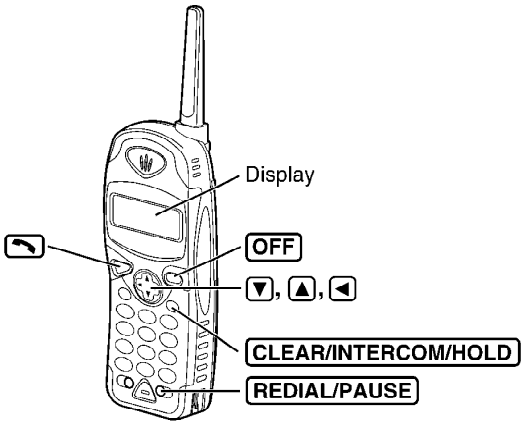
- If another phone is connected on the same line, you can also release the hold by lifting its handset.

Backlit LCD display

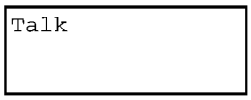
The lighted base unit display will stay after lifting the handset or pressing **DIGITAL SP-PHONE**.

5.1.2. Cordless Handset

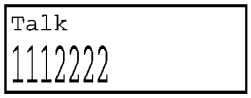
To have a hands-free conversation, connect an optional headset to the cordless handset.

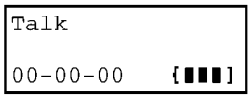


1 Press [phone].

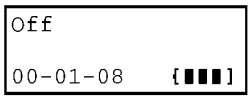


2 Dial a phone number.
- The dialed number is displayed.
- After a few seconds, the display will show the length of the call and the battery strength.





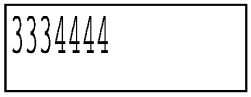
3 To hang up, press OFF or place the cordless handset on the charger.



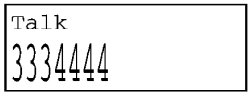
- "Line in use" is displayed on the base unit while the cordless handset is engaged in an outside call.
- If the cordless handset has lost communication with the base unit, 3 beeps sound and "No link to base. Walk closer to base & try again" is displayed.

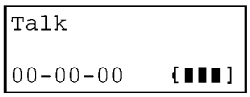
To dial after confirming the entered number

1 Dial a phone number.
- If you misdial, press CLEAR/INTERCOM/HOLD and dial again.

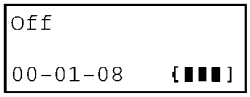


2 Press .
- After a few seconds, the display will show the length of the call and the battery strength.





3 To hang up, press OFF or place the cordless handset on the charger.



If noise interferes with the conversation

Press ◄ to select a clearer channel in the talk, intercom or remote operation mode, or move closer to the base unit.

To redial the last number dialed on the cordless handset

Press ➡ REDIAL/PAUSE.

To dial after conrming the last number dialed on the cordless handset

Press REDIAL/PAUSE ➡ .

To put a call on hold

Press **CLEAR/INTERCOM/HOLD**.

- "Line on HOLD." is displayed on the base unit.
- The DIGITAL SP-PHONE indicator flashes.
- If you put a call on hold for more than 6 minutes, an alarm tone will sound. The call will be disconnected after a total of 10 minutes.

To release the hold

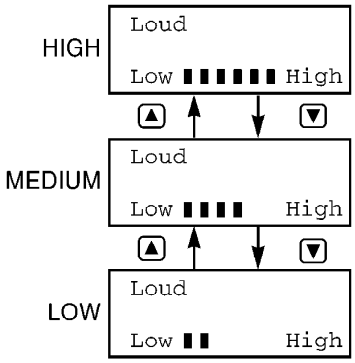
From the cordless handset, press .
From the base unit, press **DIGITAL SP-PHONE** or lift the handset.

- If another phone is connected on the same line, you can also release the hold by lifting its handset.

To select the receiver volume

Press ▲ or ▼ while talking.

- Each time you press ▲ or ▼, the volume level will change among 3 levels (HIGH, MEDIUM or LOW).
- The display will return to the length of the call.



Lighted cordless handset keypad

The cordless handset dialing buttons will light when you press a button or lift the cordless handset off the charger, and flash when a call is received. The lights will go out a few seconds after pressing a button to start operations, lifting the cordless handset or answering a call or pressing a button to complete operations such as hanging up a call, leaving the Caller List/Directory or programming.

Backlit LCD display

The lighted cordless handset display will stay on for a few seconds after pressing a cordless handset button or lifting the cordless handset off the charger.

5.2. Answering Calls

When a call is received, the unit rings and "Incoming call" is displayed. If you subscribe to a Caller ID service, the calling party information will be displayed after the first ring.
In order to view the Caller ID information, please wait until the second ring to answer a call.

5.2.1. Base Unit

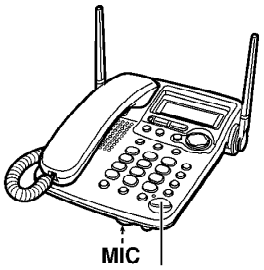
You can answer a call by simply lifting the handset. To hang up, place the handset on the cradle.

Using the speakerphone

1 Press **DIGITAL SP-PHONE**.
- The indicator lights.

2 Talk into the **MIC**.

3 To hang up, press **DIGITAL SP-PHONE**.
- The indicator light goes out.

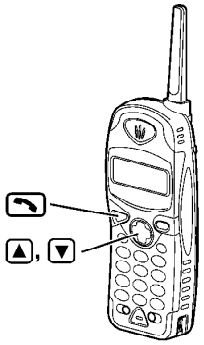


- You can select the ringer volume while a call is being received. Press **RINGER** while the base unit is just ringing. To set to OFF, press and hold **RINGER**.
- When the cordless handset and base unit ringer volumes are set to OFF, they will not ring.

5.2.2. Cordless Handset

Press .

- You can also answer a call by pressing any dialing button 0 to 9, * or # (—**Any Key Talk**).
- You can select the ringer volume while a call is being received. Press ▼ or ▲ while the cordless handset is just ringing. To set to OFF, press and hold ▼.



Auto Talk

If you set the Auto Talk feature to ON, you can answer a call by lifting the cordless handset off the charger without pressing .

5.3. Automatic Answering Operation

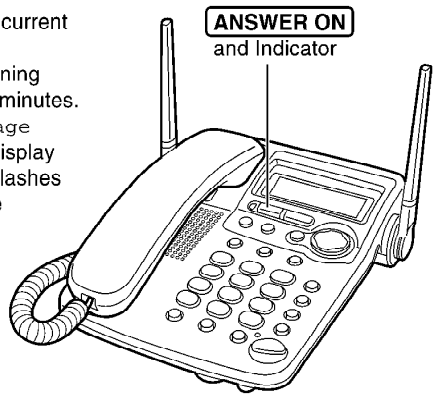
When the unit answers a call, a greeting message is played and the caller's message is recorded. While recording, "- Answering -" will flash on the cordless handset and base unit displays.

- The total recording time (including greeting message) is **about 15 minutes**. If messages are recorded in noisy rooms, the time may be shortened by up to 3 minutes.
- A maximum of 64 messages (including greeting message) can be recorded.

5.3.1. Setting the Unit to Answer Calls (Base Unit only)

Press **ANSWER ON** to turn on the answering system.

- The indicator lights and the unit announces "Answer set" and the current day and time.
- The unit will announce the remaining recording time if it is less than 5 minutes.
- If you hear "Memory full", "Message full" flashes on the base unit display and the ANSWER ON indicator flashes rapidly, erase some, or all, of the messages.



- If you do not want the unit to answer calls, press **ANSWER ON** again to turn off the answering system. The indicator light goes out and "Answer off" is heard.
- You can also turn on the answering system remotely using any other phone.

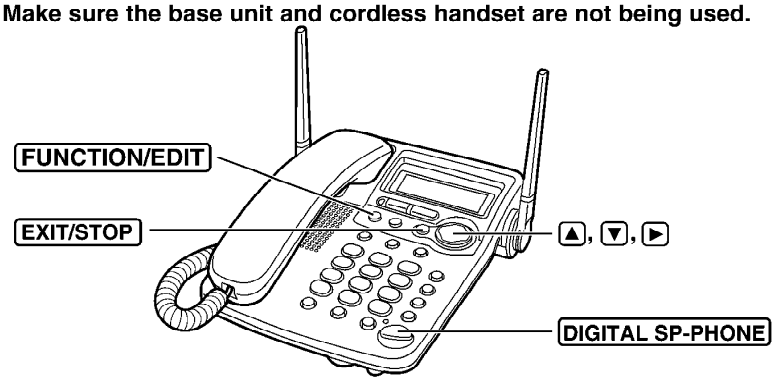
5.3.2. Call Monitoring Feature (Base Unit only)

While a call is being recorded, you can monitor it through the speaker.
•To increase the speaker volume, press ▲. To decrease, press ▼.

To answer the call with the base unit, lift the handset or press **DIGITAL SP-PHONE**. For the cordless handset, press . The unit stops recording.

If the call monitoring feature is not required, turn the feature OFF by programming. Your phone comes from factory set to "ON".

Make sure the base unit and cordless handset are not being used.



1 Press **FUNCTION/EDIT**.

```
▶Date and time
 Save DIRECT#
▼▲          ▶=Yes
```

2 Scroll to "Set answering" by pressing ▼ or ▲

```
 LCD contrast
▶Set answering
▼▲          ▶=Yes
```

3 Press ▶ (Yes key).

```
▶Greeting record
 Greeting check
▼▲          ▶=Yes
```

4 Scroll to "Call monitoring" by pressing ▼ or ▲.

```
 Recording time
▶Call monitoring
▼▲          ▶=Yes
```

5 Press ▶ (Yes key).
•The current setting is displayed.

```
 Call monitoring
          :On
▼▲        ▶=Save
```

6 Select "On" or "Off" by pressing ▼ or ▲.

```
 Call monitoring
          :Off
▼▲        ▶=Save
```

7 Press ▶ (Save key).
•A beep sounds.
•To exit the programming mode, press **EXIT/STOP**.

```
 Call monitoring
          :Off
```

•You can exit the programming mode any time by pressing **EXIT/STOP**.

5.4. Listening to Messages (Base Unit only)

You can see the total number of recorded messages on the base unit display. If the ANSWER ON indicator flashes, new messages have been recorded.

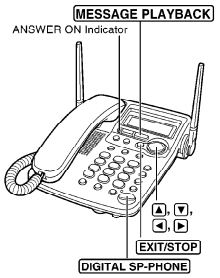
To play back messages, press **MESSAGE PLAYBACK**.

When you have new messages:
the unit announces the number of new messages and only new messages are played back.

When you have no new messages:
the unit announces "No new messages. All message playback" and plays back all messages.

When you have no messages:
the unit announces "No messages".

At the end of the last message, "End of final message" is heard. The unit will announce the remaining recording time if it is less than 5 minutes.



To adjust the speaker volume:
9 levels (0-8) are available during playback.
To increase, press ▲. To decrease, press ▼.

During playback

To **repeat** message	Press ◀. • If you press within 5 seconds of playback, the previous message will be played.
To **skip** message	Press ▶ briefly.
To **stop** operation	Press **EXIT/STOP**. • To resume playback, press **MESSAGE PLAYBACK**. • If you press **EXIT/STOP** again, the playback mode will be canceled.

For Caller ID service users

During playback, the base unit display will show the name and/or number of the caller whose message is being played.

```
SMITH,JACK
1-222-333-4444
- Message 3 -
```

To call back the displayed number:
During playback, lift the handset or press **DIGITAL SP-PHONE**.
—The unit stops playback and automatically dials the displayed phone number.

After listening to new incoming messages, "√" will be added to the call entries in the Caller ID Caller List.

5.5. Erasing Messages (Base Unit only)

The unit will announce the remaining recording time after playback, if it is less than 5 minutes. New messages cannot be recorded when:
—"Memory full" is heard.
—"Message full" flashes on the base unit display.
—the ANSWER ON indicator flashes rapidly (only when the Answering System is on).
Erase some, or all, of the messages. We recommend you erase unnecessary messages after each playback.

Erasing a specic message

Press **CLEAR/ERASE** while the message you want to erase is being played.

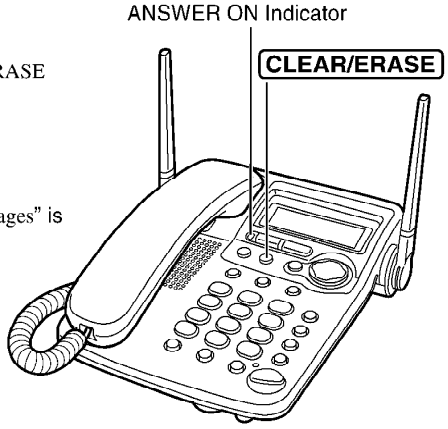
- The unit erases the message.
- A short beep will sound and the unit will continue to play the next message.

Erasing all messages

All recorded messages, except the greeting message, can be erased at one time.

1 Press **CLEAR/ERASE**.
"To erase all messages, press ERASE again" is heard.

2 Within 5 seconds, press **CLEAR/ERASE** again.
- A beep sounds and "No messages" is heard.
The base unit display shows "0 message".



- The information in the Caller List will not be erased.

5.6. FLASH Button

Pressing **FLASH/CALL WAIT/PLAYBACK** or **FLASH/CALL WAIT** allows you to use special features of your host PBX such as transferring an extension call or accessing special telephone services (optional) such as call waiting.

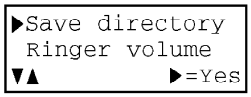
- Pressing **FLASH/CALL WAIT/PLAYBACK** or **FLASH/CALL WAIT** causes to release following operations:
  —temporary tone dialing,
  —muting your conversation.

Selecting the Flash time (Cordless Handset only)

The flash time depends on your telephone exchange or host PBX.
You can select the following flash times: "700, 600, 400, 300, 250, 110, 100 or 90 ms (milliseconds)". Your phone comes from the factory set to "700 ms".

Make sure the base unit and cordless handset are not being used.

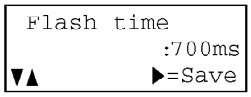
1 Press **MUTE/FUNCTION**.



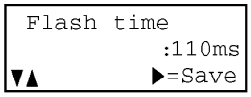
2 Scroll to "Program" by pressing ▼ or ▲.

3 Press ▶ (Yeskey).

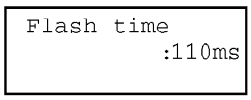
4 Press ▶ (Yes key) at "Set flash time".
- The current setting is displayed.



5 Select the desired time by pressing ▼ or ▲.



6 Press ▶ (Save key).
- A beep sounds.
- To exit the programming mode, press **OFF**.



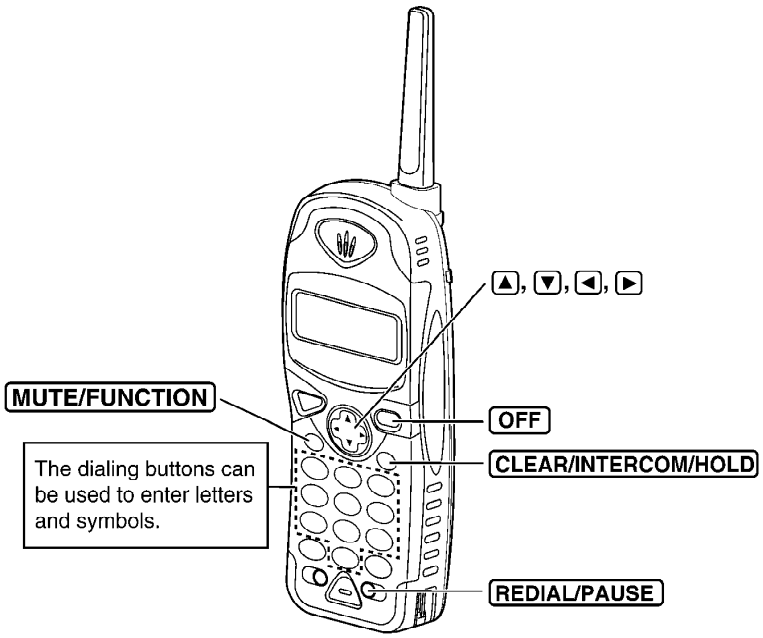
- You can exit the programming mode any time by pressing **OFF**.
- If the unit is connected via a PBX, PBX functions (transferring a call etc.) might not work correctly. Consult your PBX supplier for the correct setting.

5.7. Directory

You can store up to 50 names and phone numbers in the directory using the cordless handset. All directory items are sorted by the first word in alphabetical order. Using the directory, you can make a call by selecting a name on the display of the cordless handset or base unit.

5.7.1. Storing Names and Numbers (Cordless Handset only)

Storing must be carried out with the cordless handset.
Make sure the base unit and cordless handset are not being used.



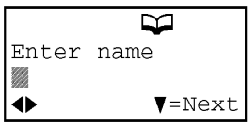
1 Press **MUTE/FUNCTION**.

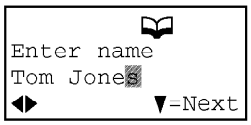
```
▶Save directory
 Ringer volume
▼▲          ▶=Yes
```

2 Press ▶ (`Yes` key) at "`Save directory`".
- The display shows the number of stored items in the directory.

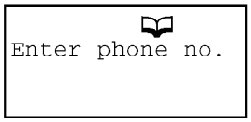
```
Directory=
  20 items
```

3 Enter a name, up to 15 characters, with the dialing buttons, ◀ or ▶.
- If a name is not required, press ▼ (Next key) and go to step 5.

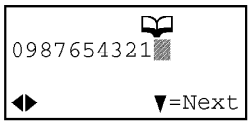




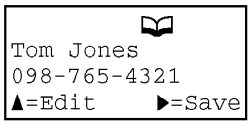
4 Press ▼ (Next key).



5 Enter a phone number, up to 22 digits.
- Each time you press CLEAR/INTERCOM/HOLD, a digit is erased. To erase all of the digits, press and hold CLEAR/INTERCOM/HOLD.
- To move the cursor, press ◀ or ▶.



6 Press ▼ (Next key).
- If you want to change the storing name or number, press ▲ (Edit key) repeatedly to reach the desired display and change it.

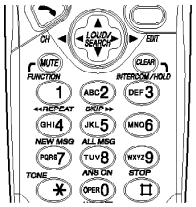


7 Press ▶ (Save key).
- A beep sounds.
- To continue storing other items, repeat from step 2.
- To exit the programming mode, press OFF.

- If a pause is required for dialing, REDIAL/PAUSE can be stored in a phone number counting as one digit in step 5.
- You can exit the programming mode any time by pressing OFF.
- If the display shows "Directory full" in step 2, the display will return to step 1. Press OFF to exit the list.
- After the maximum of 50 items has been stored,"Directory full" is also displayed.
- If an alarm tone sounds in step 7, the item cannot be stored in the directory. Press OFF and try again from step1.

5.7.2. Entering Names and Symbols (Cordless Handset only)

The cordless handset dialing buttons (0 to 9) can be used to enter letters and symbols.
The letters are printed on the dialing buttons.
Pressing each button selects a character as shown below.



	Number of times key is pressed										
Keys	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
1	#	&	’	(	)	*	,	–	.	/	1
2	a	b	c	A	B	C	2				
3	d	e	f	D	E	F	3				
4	g	h	i	G	H	I	4				
5	j	k	l	J	K	L	5				
6	m	n	o	M	N	O	6				
7	p	q	r	s	P	Q	R	S	7		
8	t	u	v	T	U	V	8				
9	w	x	y	z	W	X	Y	Z	9		
0	0	Blank									
◀	To move the cursor to the left.										
▶	To move the cursor to the right.										

- To enter another character using the same dialing button, press ▶ to move the cursor to the next space.

If you make a mistake while entering a name

Use ◀ or ▶ to move the cursor to the incorrect character, press **CLEAR/INTERCOM/HOLD** to delete and enter the correct character.
Each time you press **CLEAR/INTERCOM/HOLD**, a character is erased.
To erase all characters, press and hold **CLEAR/INTERCOM/HOLD**.

For example, to enter “Tom Jones”:

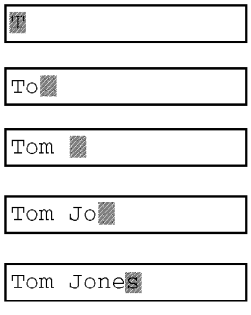
1 Press 8 four times.

2 Press 6 three times, then press ▶.

3 Press 6 once, then press ▶ twice.

4 Press 5 four times, press 6 three times, then press ▶.

5 Press 6 twice, press 3 twice, then press 7 four times.



5.7.3. Finding Stored Items

You can search the directory using the cordless handset or the base unit.
" 🕮 " is displayed only on the cordless handset display.
Make sure the base unit and cordless handset are not being used.

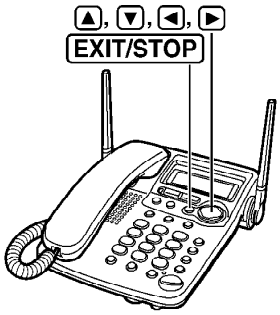
1 Press ◀ or ▶ to enter the directory list.

```
      🕮
Directory list
▼▲
 ▶=Caller's list
```

• You can go to the Caller List by pressing ▶.

2 Press ▼ or ▲.
• The first item is displayed.

```
      🕮
Ann
123-456-7890
```

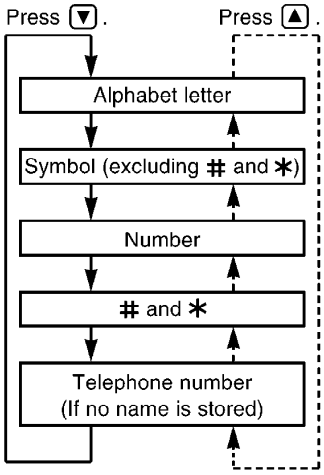


3 Scroll to the desired item by pressing ▼ or ▲.
• All directory items are stored in the order shown on the right.

To search for a name by the initial

① Press the dialing button for the first letter of the desired name until any name with the same initial is displayed (see the Index table below).
Ex. To find "Frank", press 3 repeatedly until the first item under "F" is displayed.

②Press ▼ repeatedly until the name is displayed.



• You can exit the directory list any time by pressing OFF or EXIT/STOP.
• If "No items stored" is displayed in step 2, the directory is empty.

Index table

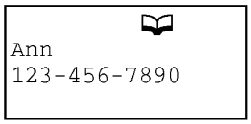
Keys	Index	Keys	Index
1	Other symbols, 1	6	M, N, O, 6
2	A, B, C, 2	7	P, Q, R, S, 7
3	D, E, F, 3	8	T, U, V, 8
4	G, H, I, 4	9	W, X, Y, Z, 9
5	J, K, L, 5	0	0

5.7.4. Dialing

" 📖 " is displayed only on the cordless handset display.
Make sure the base unit and cordless handset are not being used.

1 Press ◀ or ▶ to enter the directory list.

2 Press ▼ or ▲.
• The first item is displayed.



3 Scroll to the desired item that you want to dial by pressing ▼ or ▲.

4 **Base unit:**
Press DIGITAL SP-PHONE, or lift the handset.
Cordless handset:
Press 📞.
• The number is dialed automatically.

5 To hang up,
Base unit:
Press DIGITAL SP-PHONE, or place the handset on the cradle.
Cordless handset:
Press OFF or place the cordless handset on the charger.

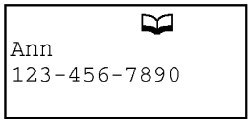
• You can exit the directory list any time as follows:
When using the cordless handset, press OFF.
When using the base unit, press EXIT/STOP.

5.7.5. Editing (Cordless Handset only)

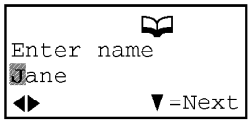
Make sure the base unit and cordless handset are not being used.

1 Press ◀ or ▶ to enter the directory list.

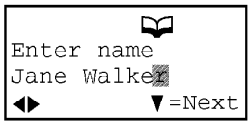
2 Press ▼ or ▲.
- The first item is displayed.



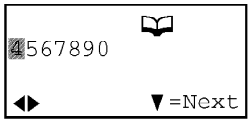
3 Scroll to the directory item you want to change by pressing ▼ or ▲, and press ▶.
- If you do not need to change the name, go to step 5.



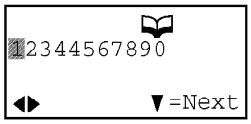
4 Edit the name using the dialing buttons, ◀ or ▶, up to 15 characters.



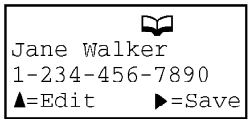
5 Press ▼ (Next key).



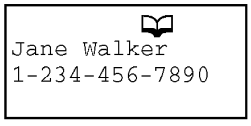
6 Add a number to the current number.
- If you do not need to change the number, press ▼ (Next key) and go to step 8.
- Each time you press CLEAR/INTERCOM/HOLD, a digit is erased. To erase all of the digits, press and hold CLEAR/INTERCOM/HOLD.
- To move the cursor, press ◀ or ▶.



7 Press ▼ (Next key).
- If you want to change the storing name or number, press ▲ (Edit key) repeatedly to reach the desired display and change it.



8 When finished, press ▶ (Save key).
- A beep sounds.
- To continue editing other items, repeat step 3.
- To exit the directory list, press OFF.



- You can exit the edit mode any time by pressing OFF.

5.7.6. Erasing

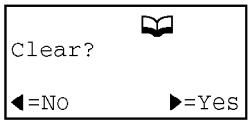
" 🕮 " is displayed only on the cordless handset display.
Make sure the base unit and cordless handset are not being used.

1 Press ◀ or ▶ to enter the directory list.

2 Press ▼ or ▲.
The first item is displayed.

3 Scroll to the directory item that you want to erase by pressing ▼ or ▲.

4 **Base unit:**
Press CLEAR/ERASE.
Cordless handset:
Press CLEAR/INTERCOM/HOLD.
• To stop erasing, press ◀ (No key).



5 **Base unit:**
Press ▶ (Yes key) or CLEAR/ERASE.
Cordless handset:
Press ▶ (Yes key) or CLEAR/INTERCOM/HOLD.

• A beep sounds.
• You can exit the directory list any time as follows:
When using the cordless handset, press OFF.
When using the base unit, press EXIT/STOP.

6. DISASSEMBLY INSTRUCTIONS

(Base Unit)

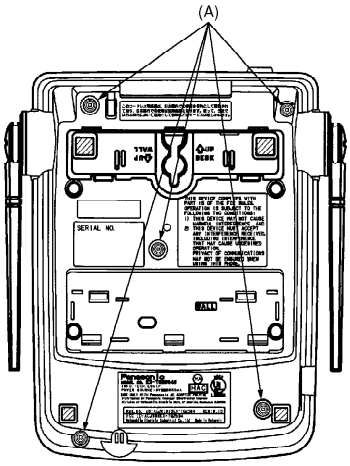


Fig. 1

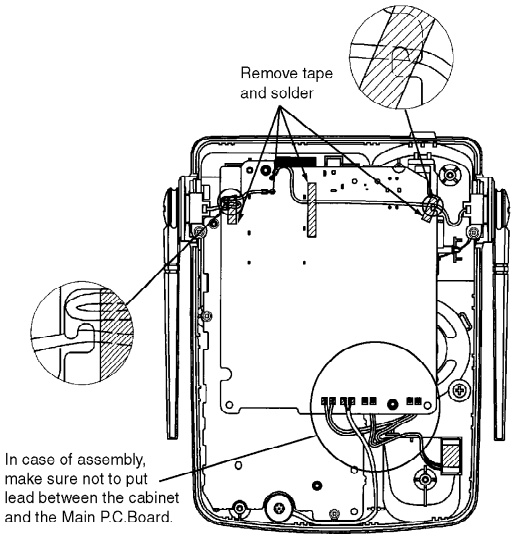


Fig. 2

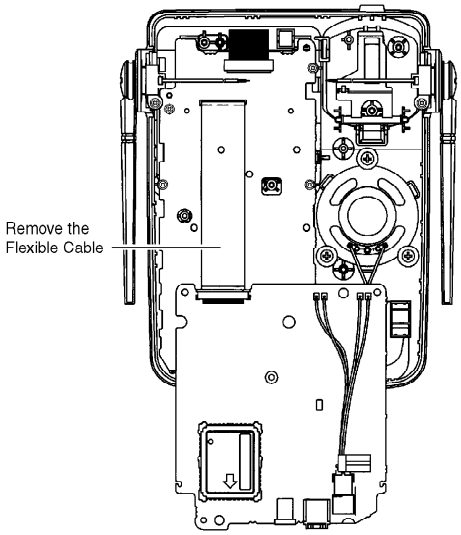


Fig. 3

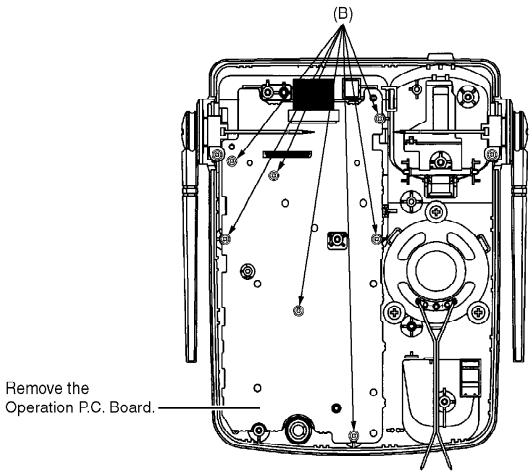


Fig. 4

Shown in Fig	To remove	Remove
1	Lower Cabinet	Screws (2.6 × 14).....(A) × 5
2	Main P.C. Board	Tape and Solder
3		Flexible Cable
4	Operation P.C. Board	Screws (2.6 × 8).....(B) × 7
		Main P.C. Board

(Cordless Handset)

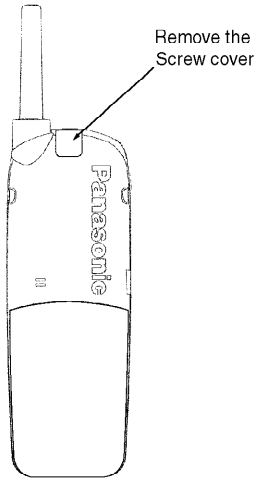


Fig. 5

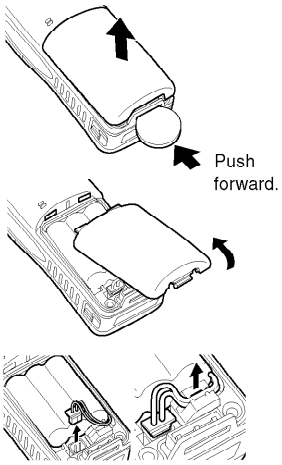


Fig. 6

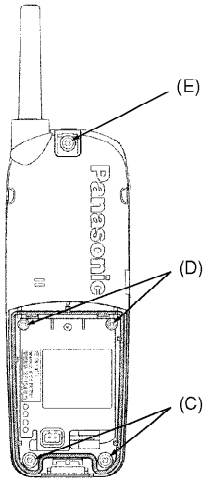


Fig. 7

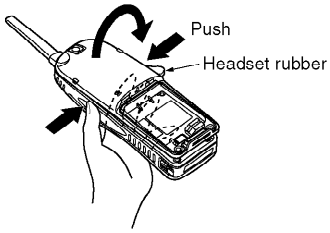


Fig. 8

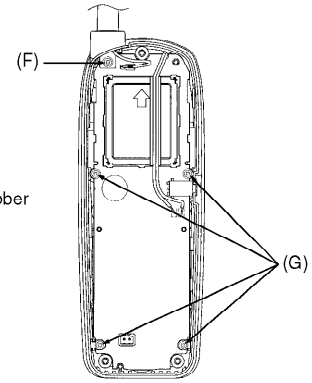


Fig. 9

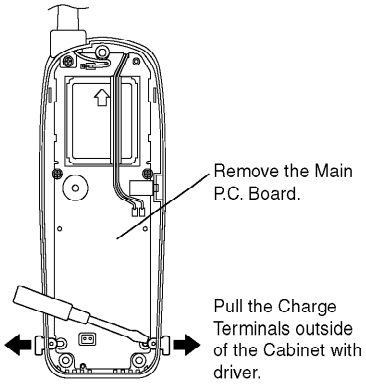


Fig. 10

Shown in Fig	To remove	Remove
5	Screw Cover	Screw Cover
6	Battery Cover	Battery Cover
7	Rear Cabinet	Screws (2.6 × 12).....(C) × 2 Screws (2 × 8).....(D) × 2 Screw (2.6 × 12).....(E) × 1
8	Rear Cabinet	Rear Cabinet
9	Antenna	Screw (2.6 × 12).....(F) × 1
	Main P.C. Board	Screws (2 × 8).....(G) × 4
10	Main P.C. Board	Main P.C. Board

(Charger unit)

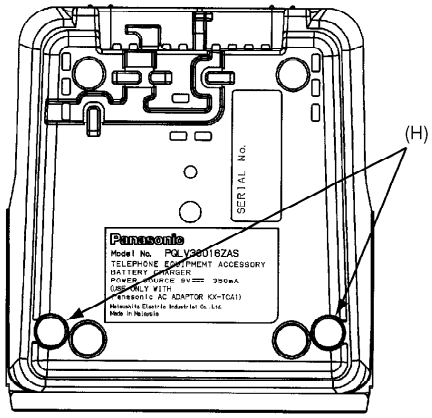


Fig. 10

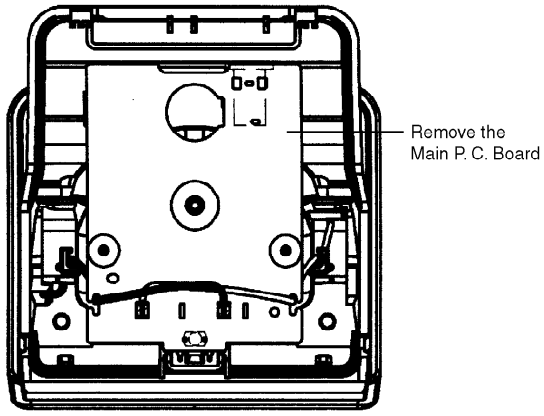
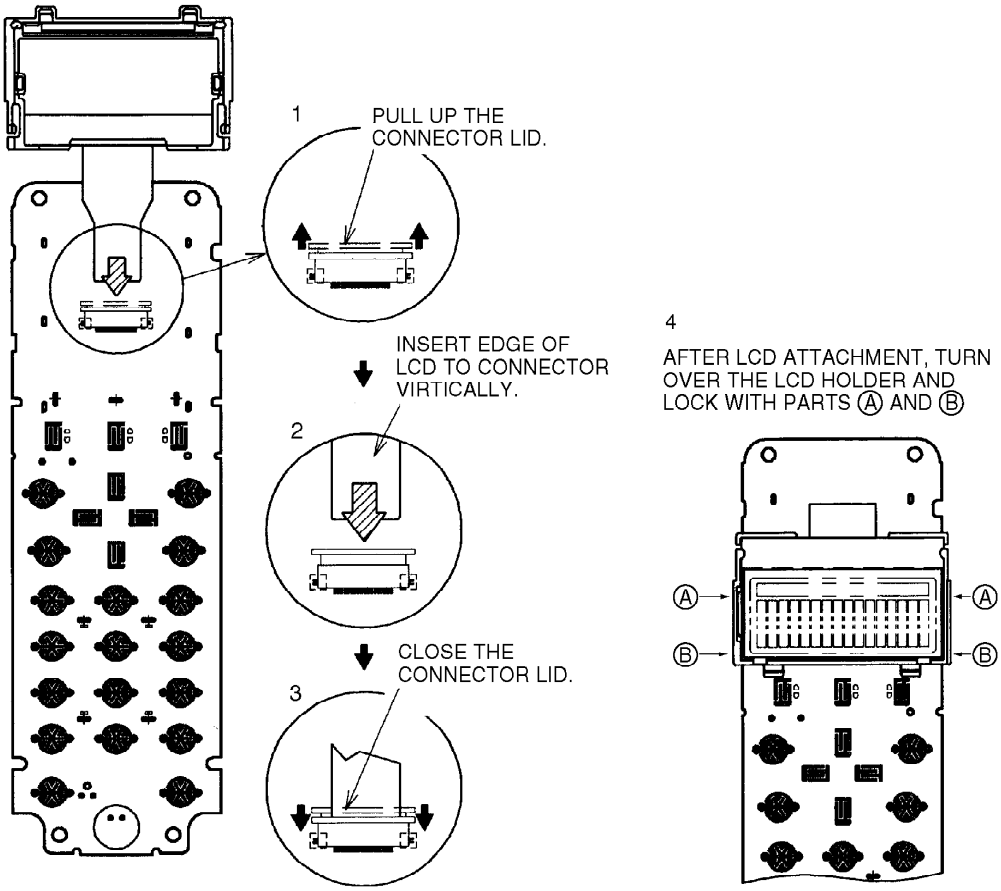


Fig. 11

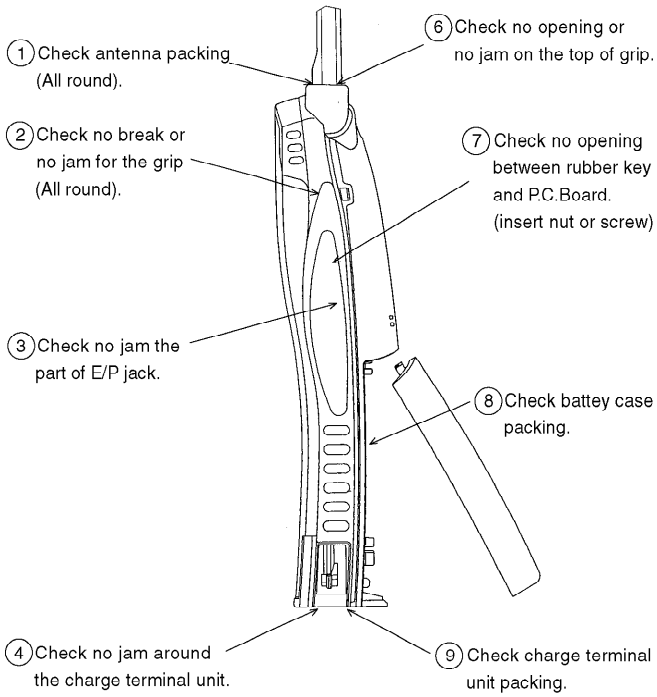
Shown in Fig	To remove	Remove
1	Lower Cabinet	Screws (2.6 × 14).....(H) × 2
2	P.C. Board	Main P.C. Board

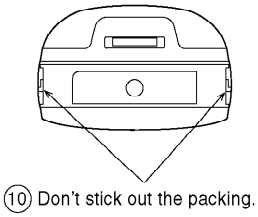
7. ASSEMBLY INSTRUCTIONS

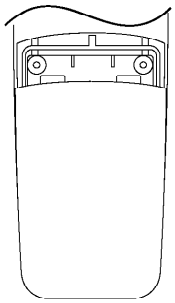
7.1. Asseembly the LCD to P.C. Board (Cordless handset)



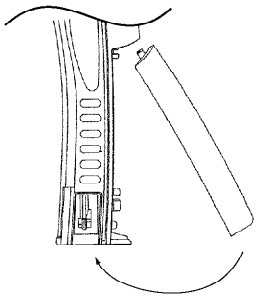
7.2. How To Check Splash Resistance (Cordless handset)


1 Check antenna packing (All round).
2 Check no break or no jam for the grip (All round).
3 Check no jam the part of E/P jack.
4 Check no jam around the charge terminal unit.
6 Check no opening or no jam on the top of grip.
7 Check no opening between rubber key and P.C.Board. (insert nut or screw)
8 Check battey case packing.
9 Check charge terminal unit packing.





11 Attach carefly not to turn up packing.



7.3. Replace the RF unit

For BU (Base Unit)/C-HS (Cordless Handset)
Follow this procedure below when replacing C-HS RF unit.

1. **Remove speaker cables of LCD unit on C-HS main board. And remove LCD unit.**
2. **Remove solder on six legs of RF unit.**
3. **Remove solder on all pads of RF unit.**
4. **Replace defective RF unit with new C-HS RF unit.**

NOTE:

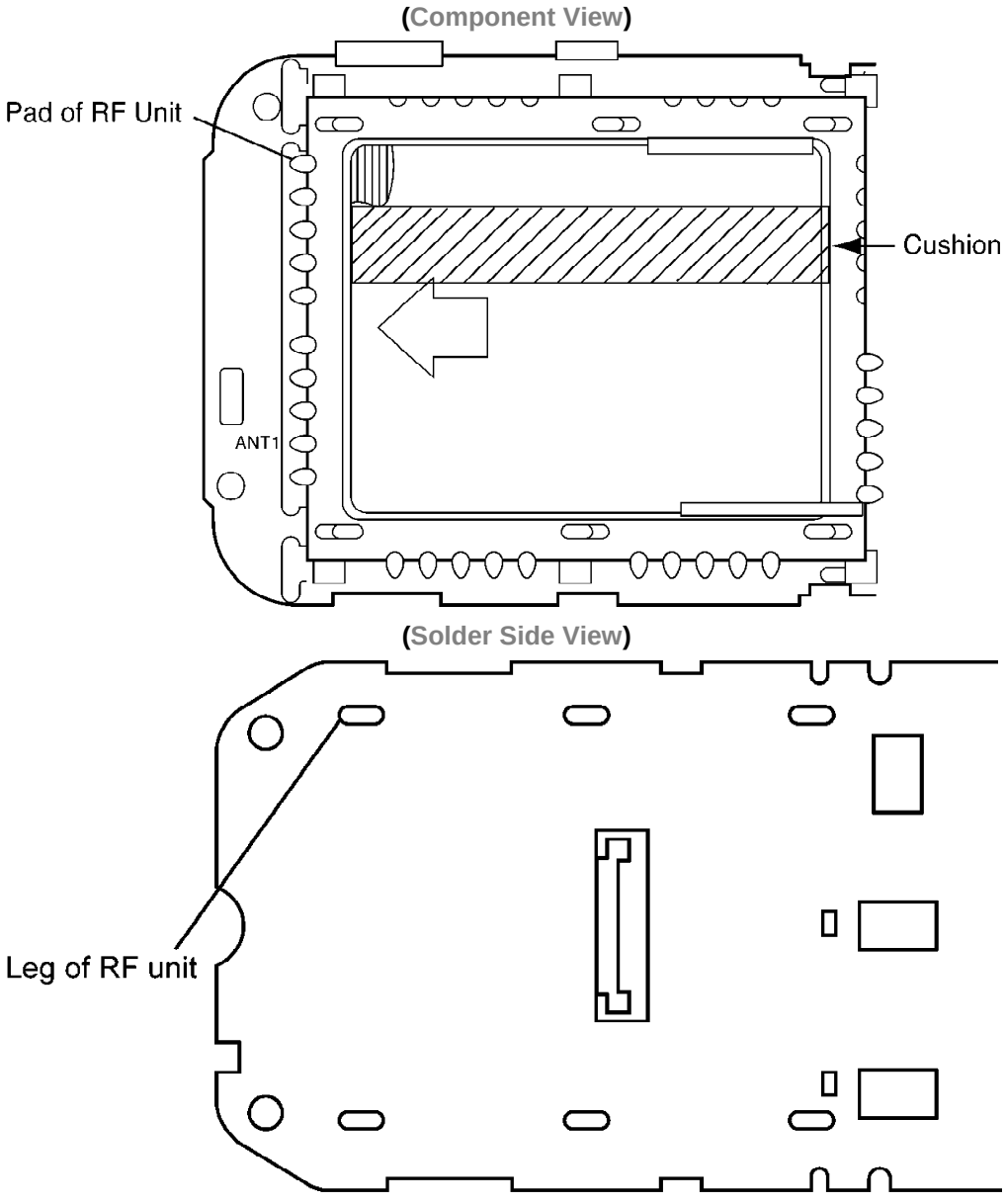
Do not use BU RF unit for C-HS one.

C-HS RF unit is different from BU one.

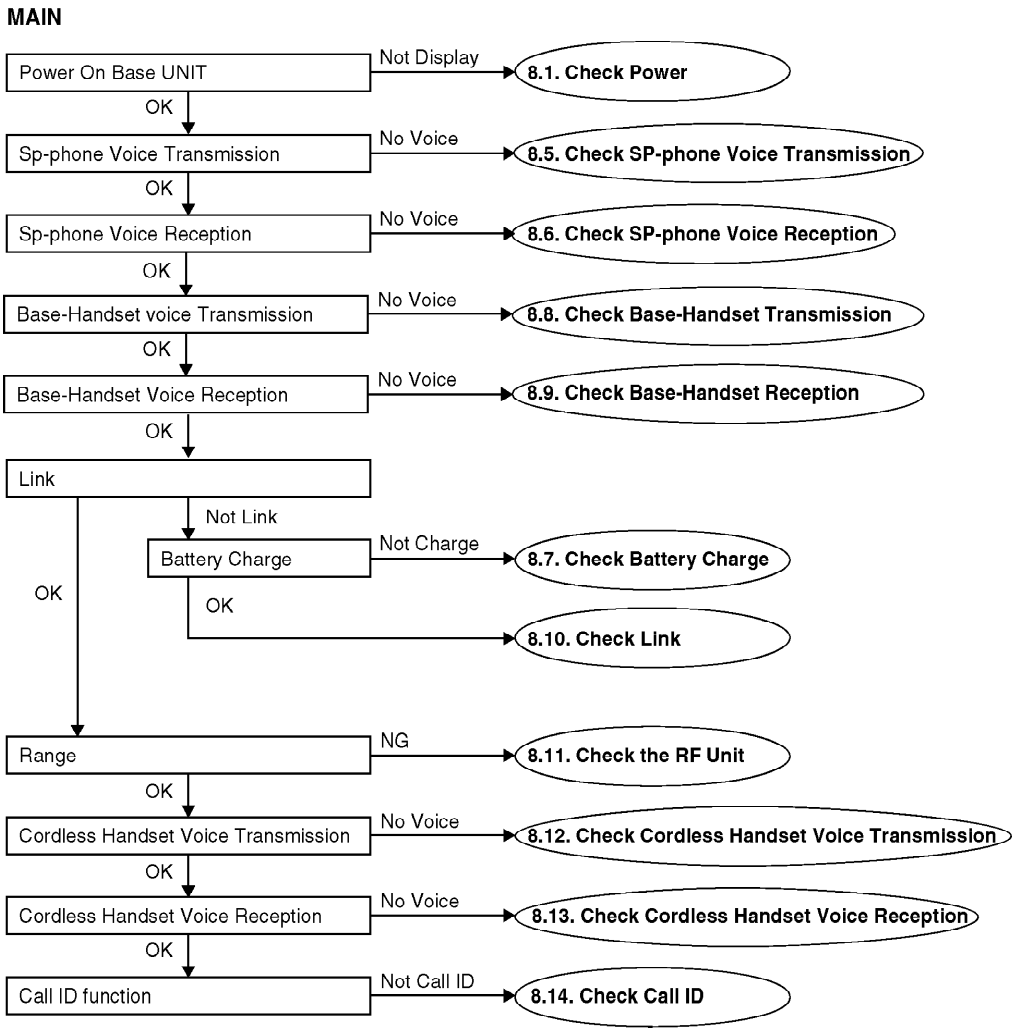
5. **Solder all pads of RF unit.**
6. **Solder six RF legs.**
7. **Put LCD unit and solder speaker wire.**

NOTE:

Speaker wire has polarity.



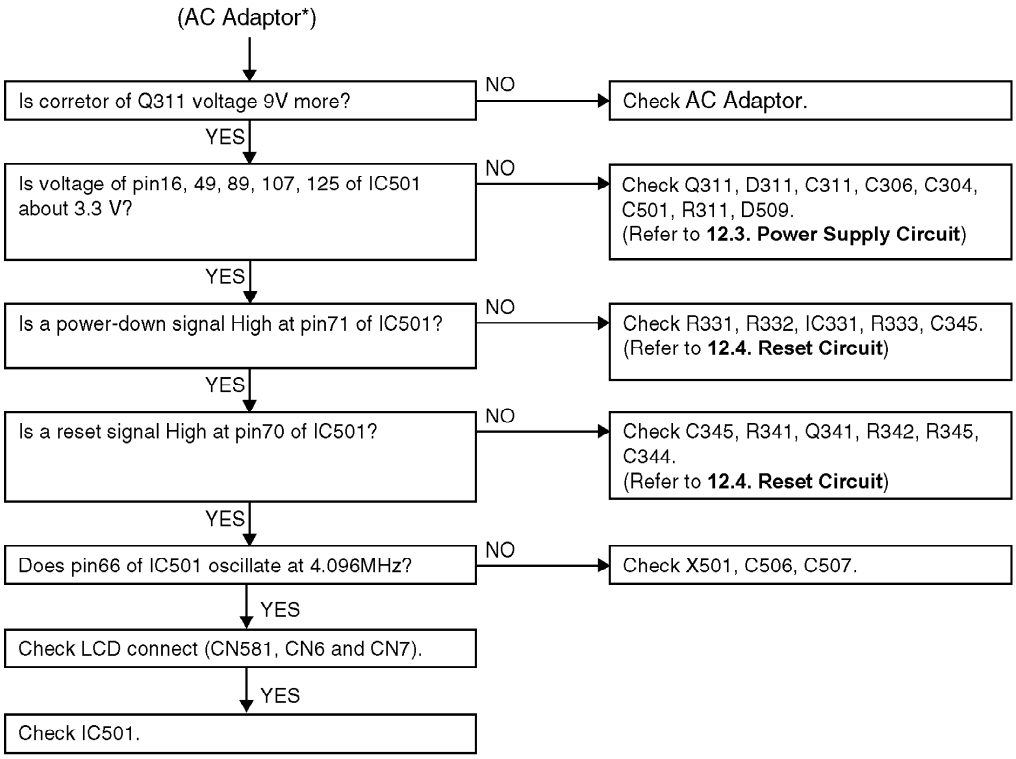
8. TROUBLESHOOTING GUIDE



8.1. Check Power

Base Unit

Is the AC Adaptor inserted into AC outlet?* (*Check the AC Adaptor's specification.)


(AC Adaptor*)
Is corretor of Q311 voltage 9V more?
NO
Check AC Adaptor.
YES
Is voltage of pin16, 49, 89, 107, 125 of IC501 about 3.3 V?
NO
Check Q311, D311, C311, C306, C304, C501, R311, D509. (Refer to 12.3. Power Supply Circuit)
YES
Is a power-down signal High at pin71 of IC501?
NO
Check R331, R332, IC331, R333, C345. (Refer to 12.4. Reset Circuit)
YES
Is a reset signal High at pin70 of IC501?
NO
Check C345, R341, Q341, R342, R345, C344. (Refer to 12.4. Reset Circuit)
YES
Does pin66 of IC501 oscillate at 4.096MHz?
NO
Check X501, C506, C507.
YES
Check LCD connect (CN581, CN6 and CN7).
YES
Check IC501.

Cross Reference:

Power Supply Circuit ()

Reset Circuit ()

Note:

***Connections ()**

8.2. Error Message Table

Display	Symptom	Remedy
System error 1	The initialization was tried, but it could not be done.	1. Confirm Flash Memory is equipped. 2. Confirm the connection of Flash Memory. 3. Confirm the power supply of Flash Memory. When no error is found in above-mentioned items, Flash Memory has a defect. Replace Flash Memory.
System error 2	The defect of Flash Memory was detected.	When Flash Memory has the fatal detect, replace Flash Memory. This error hardly occurs.
System error 3 System error 9	When the adjustment data was checked, an error was detected. (The adjustment data may not be written.)	1. Confirm Flash Memory is equipped. 2. Confirm the connection of Flash Memory. 3. Confirm the power supply of Flash Memory. When no error is found in above-mentioned items, Flash Memory has a defect. Replace Flash Memory.
System error 4	The defect of DSP was detected. (The chip in DSP may have a defect.)	1. Confirm the connection of DSP. 2. Confirm the oscillation frequency of DSP. When no error is found in above-mentioned items, DSP has a defect. Replace DSP.
System error 5 System error 6	The defect of DSP was detected.	When DSP has the fatal defect, replace DSP. This error hardly occurs.
System error 7	The defect of synthesized voice was detected. (The synthesized voice may not be written.)	1. Confirm Flash Memory is equipped. 2. Confirm the connection of Flash Memory. 3. Confirm the power supply of Flash Memory. When no error is found in above-mentioned items, Flash Memory has a defect. Replace Flash Memory.

Note:

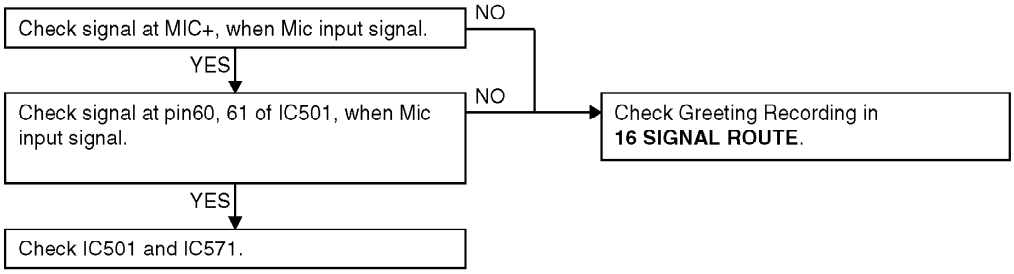
Flash memory is IC571.

DSP is IC501.

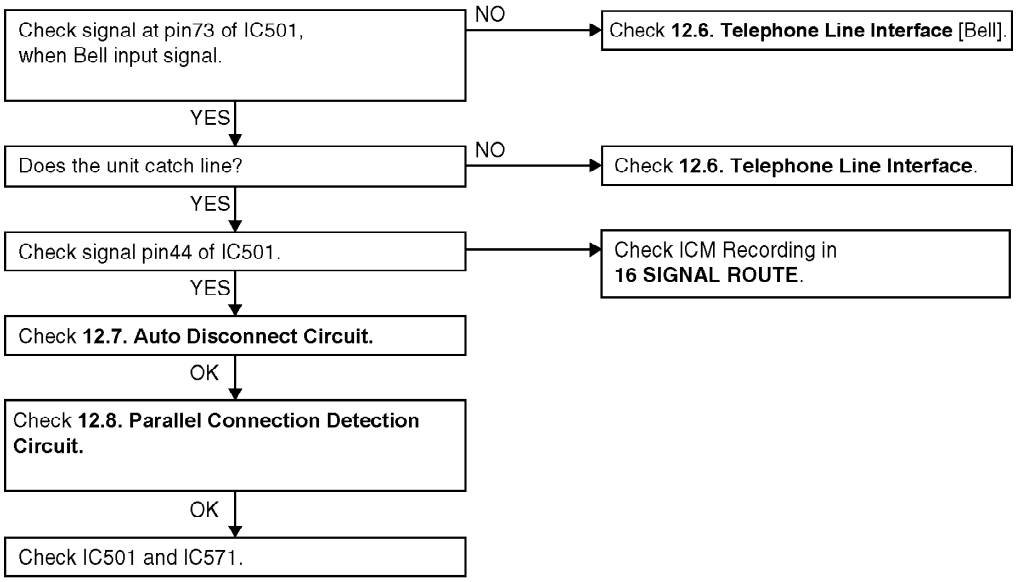
8.3. Check Record

Base Unit

Not record Greeting Message


Check signal at MIC+, when Mic input signal.
NO
YES
Check signal at pin60, 61 of IC501, when Mic input signal.
NO
Check Greeting Recording in 16 SIGNAL ROUTE.
YES
Check IC501 and IC571.

Not record Incoming Message



Cross Reference:

Auto Disconnect Circuit ()

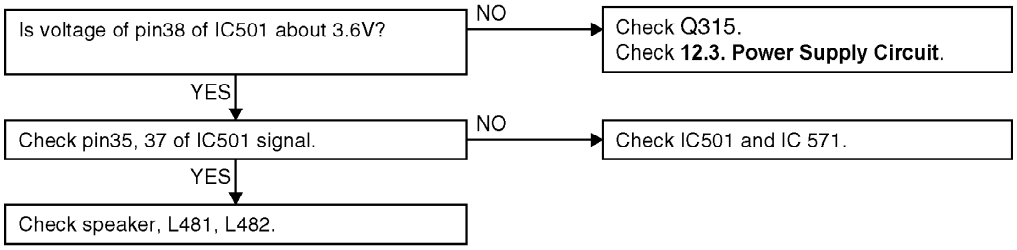
Parallel Connection Detection Circuit ()

Telephone Line Interface ()

SIGNAL ROUTE ()

8.4. Check Playback

Base Unit

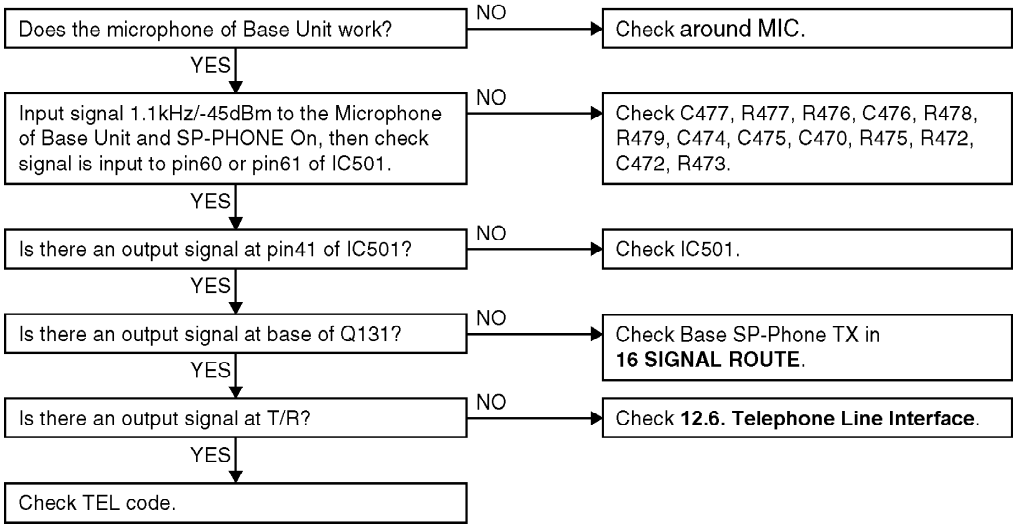


Cross Reference:

Power Supply Circuit ()

8.5. Check SP-phone Voice Transmission

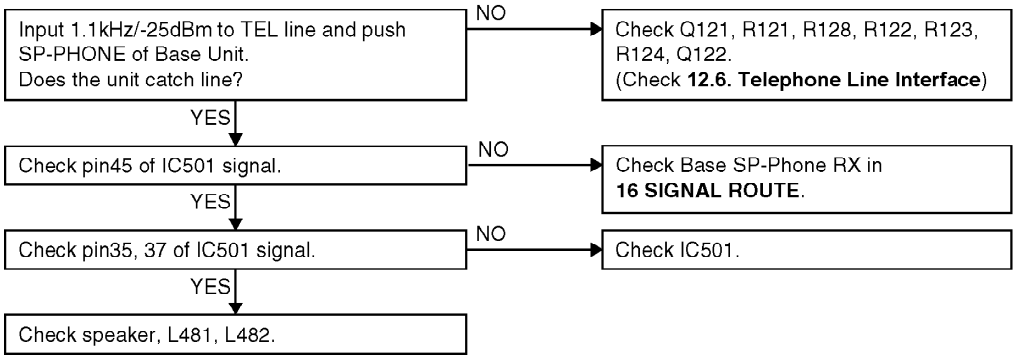
Base Unit


Does the microphone of Base Unit work?
NO
Check around MIC.
YES
Input signal 1.1kHz/-45dBm to the Microphone of Base Unit and SP-PHONE On, then check signal is input to pin60 or pin61 of IC501.
NO
Check C477, R477, R476, C476, R478, R479, C474, C475, C470, R475, R472, C472, R473.
YES
Is there an output signal at pin41 of IC501?
NO
Check IC501.
YES
Is there an output signal at base of Q131?
NO
Check Base SP-Phone TX in 16 SIGNAL ROUTE.
YES
Is there an output signal at T/R?
NO
Check 12.6. Telephone Line Interface.
YES
Check TEL code.

Cross Reference:
Telephone Line Interface ()
SIGNAL ROUTE ()

8.6. Check SP-phone Voice Reception

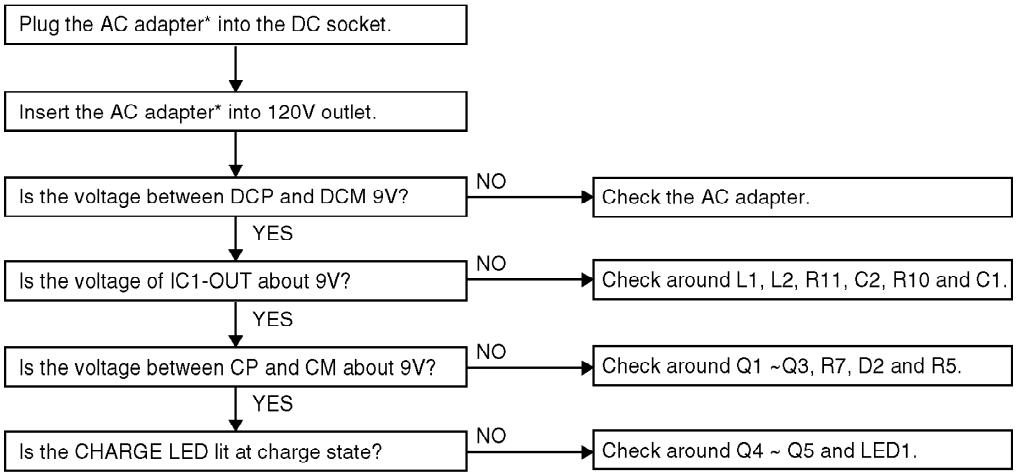
Base Unit


Input 1.1kHz/-25dBm to TEL line and push SP-PHONE of Base Unit.
Does the unit catch line?
NO
Check Q121, R121, R128, R122, R123, R124, Q122.
(Check 12.6. Telephone Line Interface)
YES
Check pin45 of IC501 signal.
NO
Check Base SP-Phone RX in 16 SIGNAL ROUTE.
YES
Check pin35, 37 of IC501 signal.
NO
Check IC501.
YES
Check speaker, L481, L482.

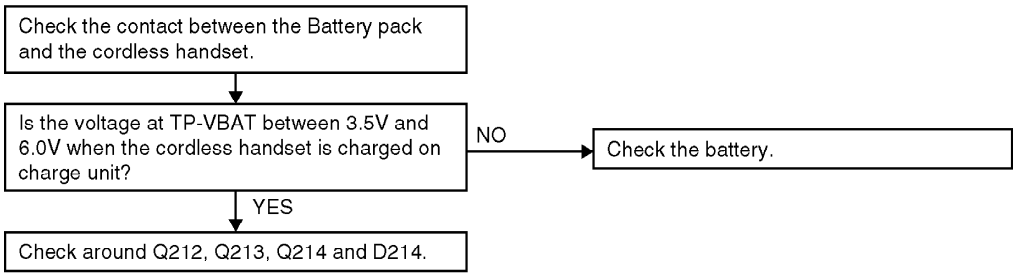
Cross Reference:
Telephone Line Interface ()
SIGNAL ROUTE ()

8.7. Check Battery Charge

Charger Unit


Plug the AC adapter* into the DC socket.
Insert the AC adapter* into 120V outlet.
Is the voltage between DCP and DCM 9V?
NO
Check the AC adapter.
YES
Is the voltage of IC1-OUT about 9V?
NO
Check around L1, L2, R11, C2, R10 and C1.
YES
Is the voltage between CP and CM about 9V?
NO
Check around Q1 ~Q3, R7, D2 and R5.
YES
Is the CHARGE LED lit at charge state?
NO
Check around Q4 ~ Q5 and LED1.

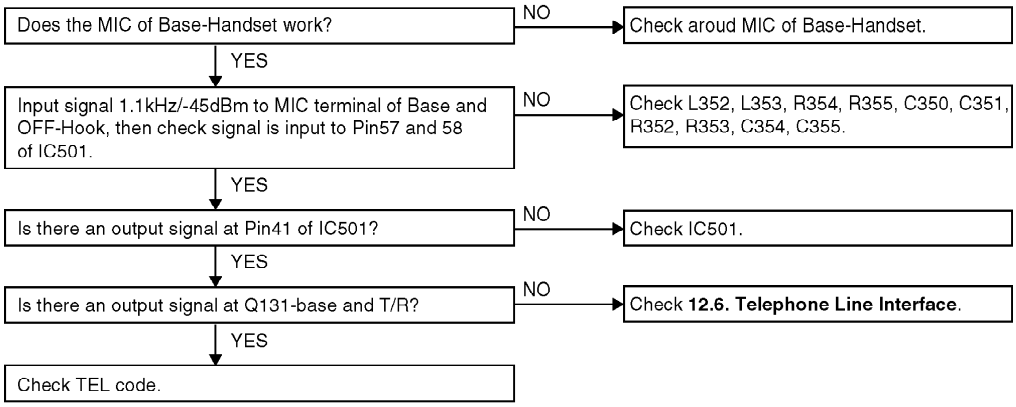
Cordless Handset


Check the contact between the Battery pack and the cordless handset.
Is the voltage at TP-VBAT between 3.5V and 6.0V when the cordless handset is charged on charge unit?
NO
Check the battery.
YES
Check around Q212, Q213, Q214 and D214.

Note:

*** Connections ()**

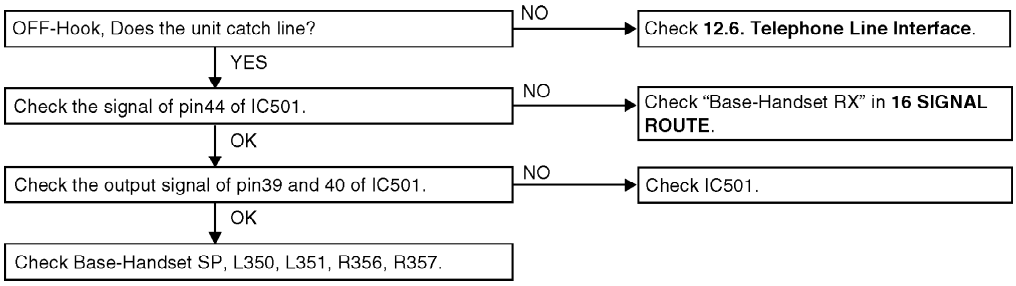
8.8. Check Base-Handset Transmission


Does the MIC of Base-Handset work?
NO
Check aroud MIC of Base-Handset.
YES
Input signal 1.1kHz/-45dBm to MIC terminal of Base and OFF-Hook, then check signal is input to Pin57 and 58 of IC501.
NO
Check L352, L353, R354, R355, C350, C351, R352, R353, C354, C355.
YES
Is there an output signal at Pin41 of IC501?
NO
Check IC501.
YES
Is there an output signal at Q131-base and T/R?
NO
Check 12.6. Telephone Line Interface.
YES
Check TEL code.

Cross Reference:

Telephone Line Interface ()

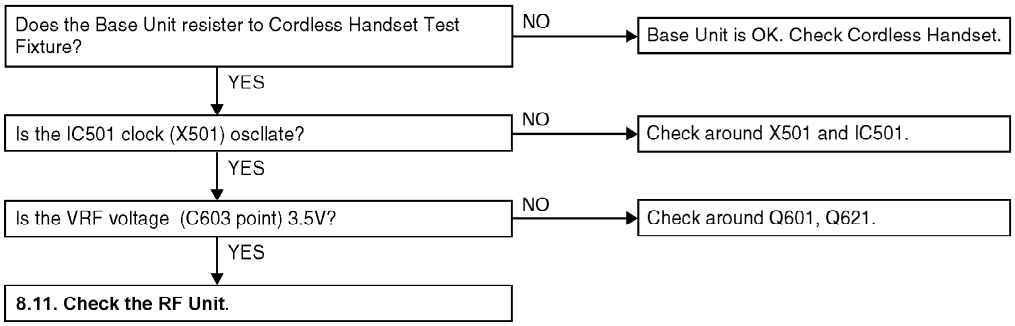
8.9. Check Base-Handset Reception



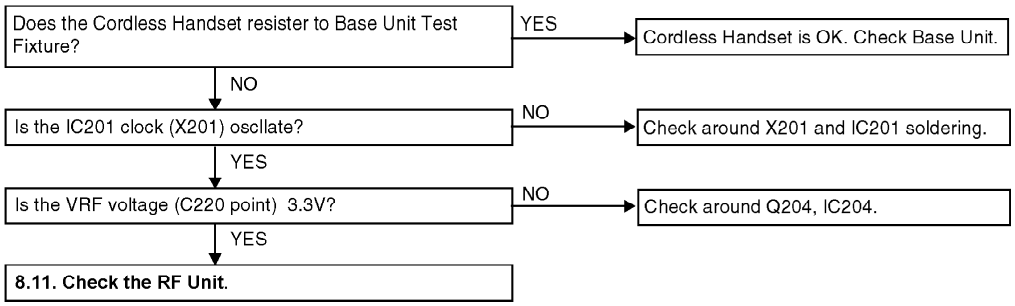
Cross Reference:
Telephone Line Interface ()
SIGNAL ROUTE ()

8.10. Check Link

Base Unit



Cordless Handset



Cross Reference:
Check the RF Unit ()

8.11. Check the RF Unit

8.11.1. Finding out the Defective Unit

1. Prepare the Test Jig (Base and Cordless-Handset).

2. Register Cordless-Handset Test Jig (Normal mode) to Base Unit (for checking).

If this operation fails in any ways, the Base Unit is the defect.

3. Register Cordless-Handset (for checking) to Base Unit Test Jig (Normal mode).
If this operation fails in any ways, the Handset is the defect.

After Checking or Repairing

- After all these check, Re-register Cordless-Handset (for checking) to Base Unit (for checking).

8.11.2. Registration Procedure

1 **Base unit:**
Press [FUNCTION/EDIT].

```
▶Date and time
 Save DIRECT#
▼▲          ▶-Yes
```

2 Press [7], [3], then [4].
No sound is present each time you press the dialing button. Confirm that the display on the right will be shown after pressing the buttons.

```
Portable
  Registering
```

3 **Cordless handset:**
Press [MUTE/FUNCTION].

```
▶Save directory
 Ringer volume
▼▲          ▶=Yes
```

4 Press [7], [3], then [4].
- No sound is present each time you press the dialing button. Confirm that the display on the right will be shown after pressing the buttons.
- After the setting is completed, "Portable Registered" is displayed and a beep sounds from the base unit and cordless handset.

```
Portable
  Registering
```

- 3 beeps sound and "Error!!" is displayed when you fail to set the security code. Try again from step 1.

8.11.3. Cordless Handset Test Jig for Base Unit

Test Jig has two mode.

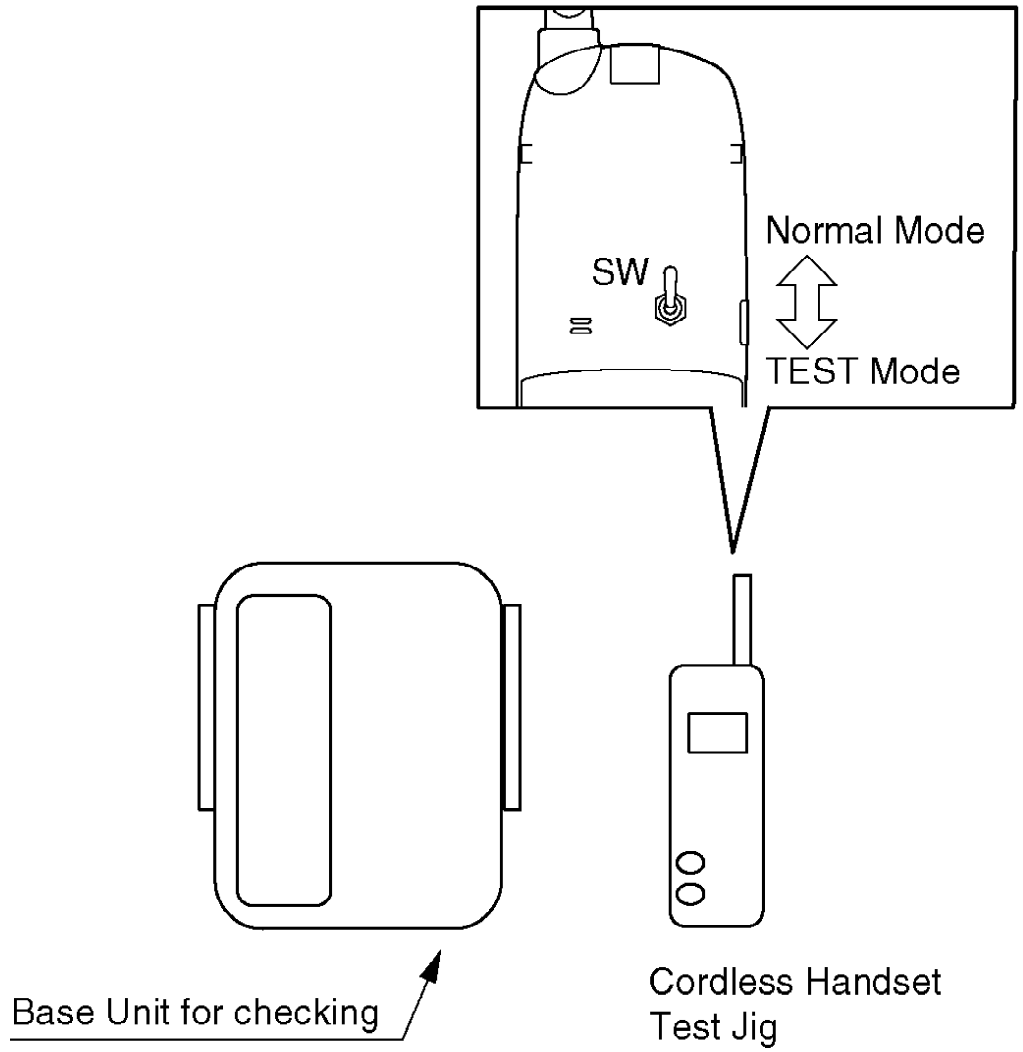
1. TEST mode: (RF Power Low mode)
The switch of Test Jig changed with TEST mode side.
Then Test Jig is in TEST mode.

2. Normal mode: (RF Power Normal mode)
The switch of Test Jig changed with Normal mode side.
Then Test Jig is in Normal mode.

This test simulates the handset is at very large distance from the base unit and the TX signal from cordless handset to base is very small.
Check Procedure: Set Cordless Handset Test Jig to Test mode. And remove cordless handset

from charger; then press TALK. If it is able to link, the base unit sensitivity is OK or a beep is not heard, Replace the RF unit.
Standard range in Test mode
5m less : Link
10m more : No Link

Note:
1) Only KX-TG2584/2564 with marks Cordless Handset Test Jig can be used for troubleshooting. Regular KX-TG2584/2564 production samples does not have the switch needed for troubleshooting.
2) No compatibility KX-TG2583 ←→ KX-TG2584, KX-TG2563 ←→ KX-TG2564



8.11.3.1. Cordless Handset Test Jig Reference Drawing

As for TEST Jig, only the switch as shown in a figure is connected to the mass-production set.

After the procedures above, change the switches of the base unit and the handset between "Normal" and "TEST" and make sure that you will get the correct results in the each link checking.

	Base Unit SW	Handset SW	Short Distance*1	Long Dist
Check 1	Normal	TEST	OK	NO
Check 2	TEST	Normal	OK	NO
Check 3	Normal	Normal	OK	OK

NOTES;
(*1) Short Distance; about 20 to 30cm between the base unit and the handset.
(*2) Long Distance; about 10m between the base unit and the handset.

8.11.4. Base Unit Test Jig for Cordless Handset

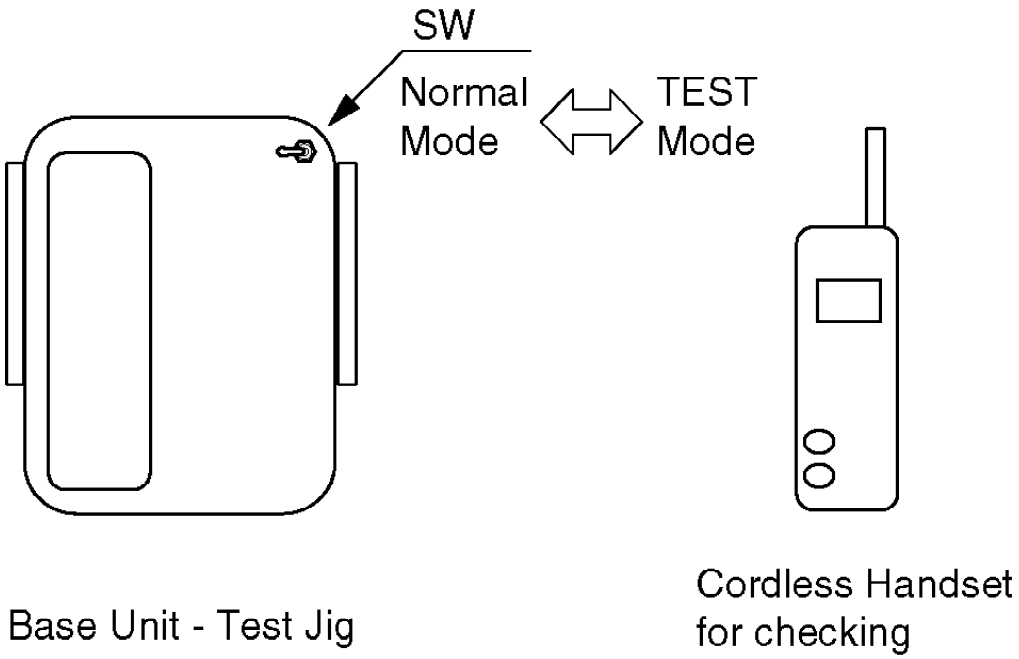
Switch to control normal mode and test modes on this Base Unit Test Jig.
Test Jig has two mode.

1. TEST mode: (RF Power Low mode)
The switch of Test Jig changed with TEST mode side.
Then Test Jig is in TEST mode.

2. Normal mode: (RF Power Normal mode)
The switch of Test Jig changed with TEST mode side.
Then Test Jig is in Normal mode.

This test simulates the cordless handset is at very large distance from the base unit and the TX signal from charger to cordless handset is very small.
Check Procedure: Set Base Unit Test Jig to Test mode. And remove cordless handset from base, then press TALK button on cordless handset and if it links with the base, then this cordless handset sensitivity is OK. If a beep is not heand, Replace the RF unit.
Standard range in Test Mode
5m less : Link
10m more : No Link

Note:
1) Only KX-TG2584/2564 with marks Base Unit Test Jig can be used for troubleshooting. Regular KX-TG2584/2564 production samples does not have the software needed for troubleshooting.
2) No compatibility KX-TG2583 ←→ KX-TG2584, KX-TG2563 ←→ KX-TG2564



8.11.4.1. Base Unit Test Jig Reference Drawing

As for TEST Jig, only the switch as shown in a figure is connected to the mass-production set.

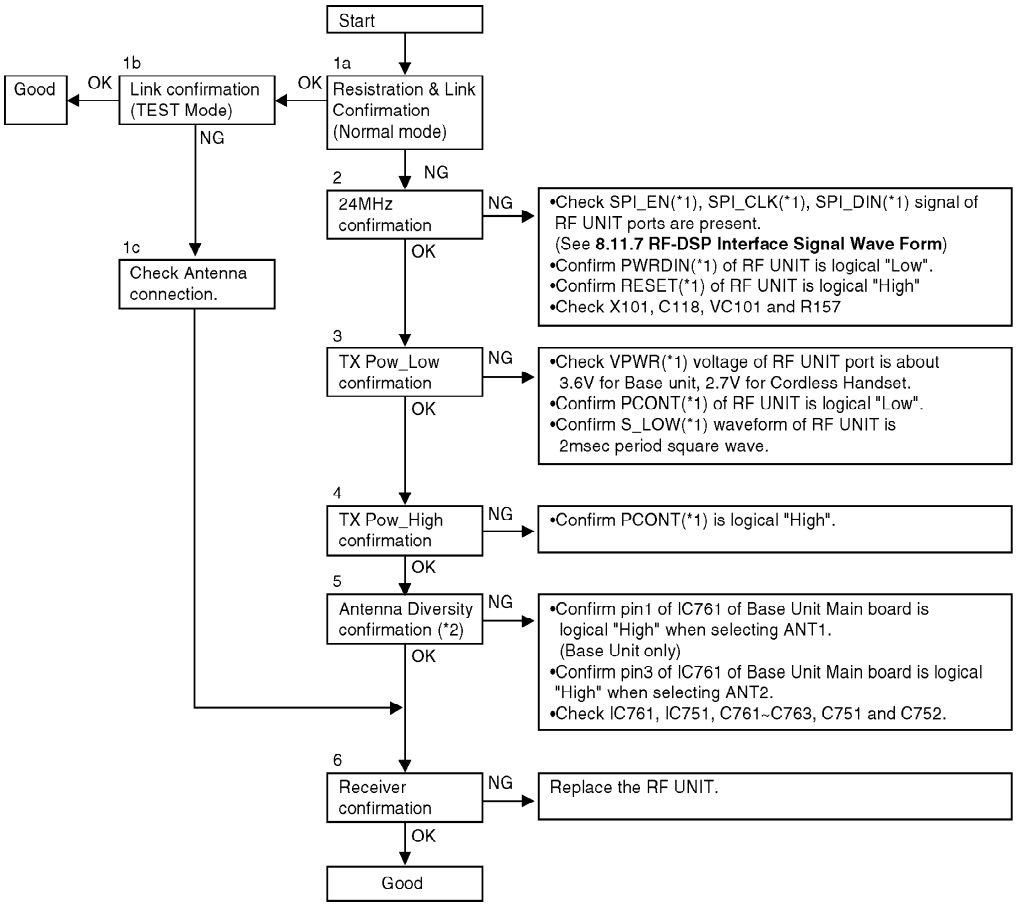
After the procedures above, change the switches of the base unit and the handset between "Normal" and "TEST" and make sure that you will get the correct results in the each link checking.

	Base Unit SW	Handset SW	Short Distance*1	Long Dist
Check 1	Normal	TEST	OK	NC
Check 2	TEST	Normal	OK	NC
Check 3	Normal	Normal	OK	OK

NOTES;
(*1) Short Distance; about 20 to 30cm between the base unit and the handset.
(*2) Long Distance; about 10m between the base unit and the handset.

8.11.5. RF Check Flowchart

Each item (1a ~ 6) of RF Check Flowchart is correspond to Check Table for RF Block. Please refer each item one by one.


Start
1a
Resistration & Link Confirmation (Normal mode)
OK
1b
Link confirmation (TEST Mode)
OK
Good
NG
1c
Check Antenna connection.
2
24MHz confirmation
NG
•Check SPI_EN(*1), SPI_CLK(*1), SPI_DIN(*1) signal of RF UNIT ports are present. (See 8.11.7 RF-DSP Interface Signal Wave Form)
•Confirm PWRDIN(*1) of RF UNIT is logical "Low".
•Confirm RESET(*1) of RF UNIT is logical "High"
•Check X101, C118, VC101 and R157
OK
3
TX Pow_Low confirmation
NG
•Check VPWR(*1) voltage of RF UNIT port is about 3.6V for Base unit, 2.7V for Cordless Handset.
•Confirm PCONT(*1) of RF UNIT is logical "Low".
•Confirm S_LOW(*1) waveform of RF UNIT is 2msec period square wave.
OK
4
TX Pow_High confirmation
NG
•Confirm PCONT(*1) is logical "High".
OK
5
Antenna Diversity confirmation (*2)
NG
•Confirm pin1 of IC761 of Base Unit Main board is logical "High" when selecting ANT1. (Base Unit only)
•Confirm pin3 of IC761 of Base Unit Main board is logical "High" when selecting ANT2.
•Check IC761, IC751, C761~C763, C751 and C752.
OK
6
Receiver confirmation
NG
Replace the RF UNIT.
OK
Good

(*1) See CIRCUIT BOARD (RF Unit) ().
(*2) Base unit RF only, refer to Check Table for RF Block ().
Cross Reference:
RF-DSP Interface Signal Wave Form ()

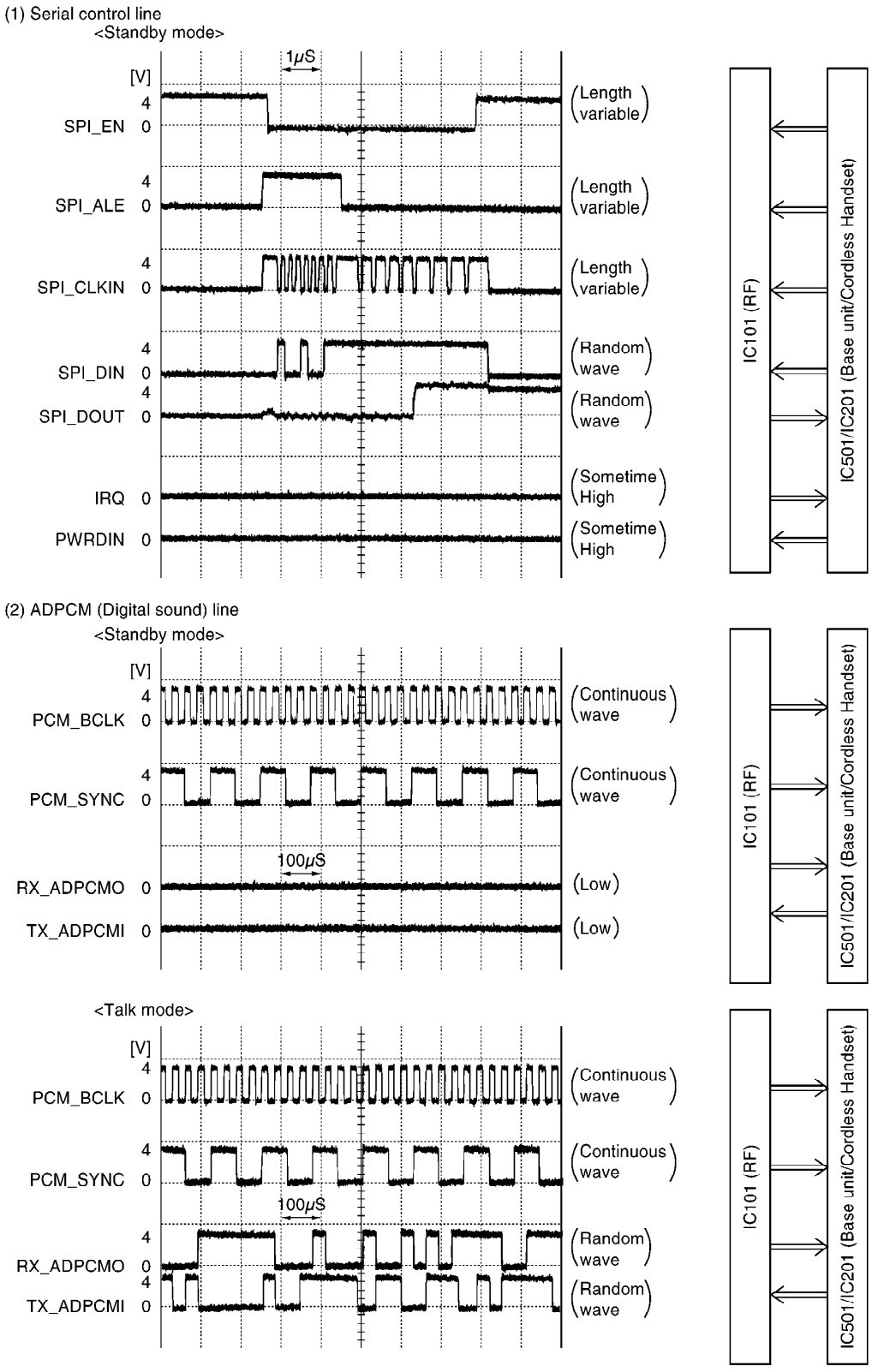
8.11.6. Check Table for RF Block

No.	Item	BU (Base unit) (*1)	C-HS (Cordless Handset) (*1)
1a	Link confirmation Normal	1. The HS Test JIG registration for "BU". 2. Set mode [Nomal Mode] position of HS Test JIG. 3. Press [TALK] key of HS Test JIG to establish link.	1. The “HS” registration for B JIG. 2. Set mode [Nomal Mode] po BU Test JIG. 3. Press [TALK] key of “HS” t establish link.
1b	Link confirmation Test	1. The HS Test JIG registration for "BU". 2. Set mode [TEST Mode] position of HS Test JIG. 3. Press [TALK] key of HS Test JIG to establish link about 5m away from "BU".	1. The “HS” registration for B JIG. 2. Set mode [TEST Mode] pos BU Test JIG. 3. Press [TALK] key of “HS” t establish link about 5m away Test JIG.
1c	Check Antenna connection	1. Check ANT1 (*2) and ANT2 (*2) soldering. 2. Check ANT1 (*2) and ANT2 (*2) points are not shorted to GND.	1. Check Antenna (*3) on HS board soldering.
2	24MHz Adjustment	1. Set BU to [Test STANDBY] mode (*5) 2. Confirm X101 frequency within 24MHz ± 720Hz at TP_FREQ(*4) of RF Unit. If X101 frequency is spec out than adjust frequency within 24 MHz ±100 Hz by VC101.	1. Set C-HS to [Test STANDB 5) 2. Confirm X101 frequency wi 24MHz ± 720Hz at TP_FREQ(* Unit. If X101 frequency is spec out adjust frequency within 24 MI Hz by VC101.
3	TX Pow_Low confirmation	1. Put low loss high frequency wire to ANT1(*2) and GND(*2) 2. Connect this wire to Spectrum analyzer. 3. Set BU to [Low Power] mode (*5) 4. Confirm TX power level within -5 ~ + 10dBm	1. Remove Antenna on C-HS board. Put low loss high freq wire to ANT(*3) and GND (*3) 2. Connect this wire to Spectr analyzer. 3. Set C-HS to [Low Power] m 4. Confirm TX power level wit 10dBm
4	TX Pow_High confirmation	5. Set BU to [High Power] mode (*5) 6. Confirm TX power level within +20± 4dBm	5. Set C-HS to [High Power] m 6. Confirm TX power level wit 4dBm
5	Antenna Diversity confirmation	7. Set BU to [Test STANDBY] mode (*5) 8. Put low loss high frequency wire to ANT2 (*2) and GND (*2) 9. Connect this wire to Spectrum analyzer 10. Press [1] key to activate the ANT2. 11. Set BU to [High Power] mode (*5) 12. Confirm TX power level within +20± 4dBm	-

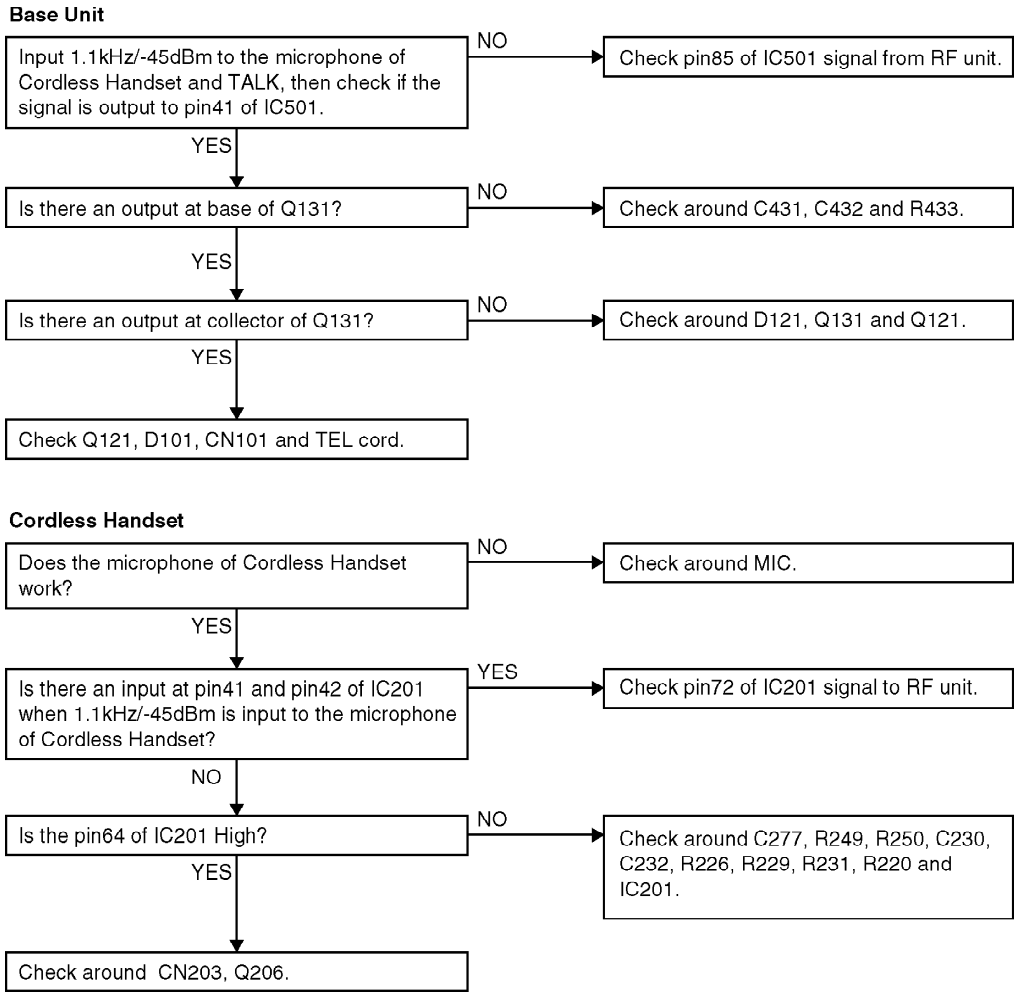
6	Receiver confirmation	Same as Item 1b.	Same as Item 1b.

(*1) BU: Base Unit, C-HS: Cordless Handset.
(*2) See Base Unit Reference Drawing ().
(*3) See Cordless Handset Reference Drawing ().
(*4) See CIRCUIT BOARD (RF Unit) ().
(*5) See TEST MODE AND ADJUSTMENT ()().

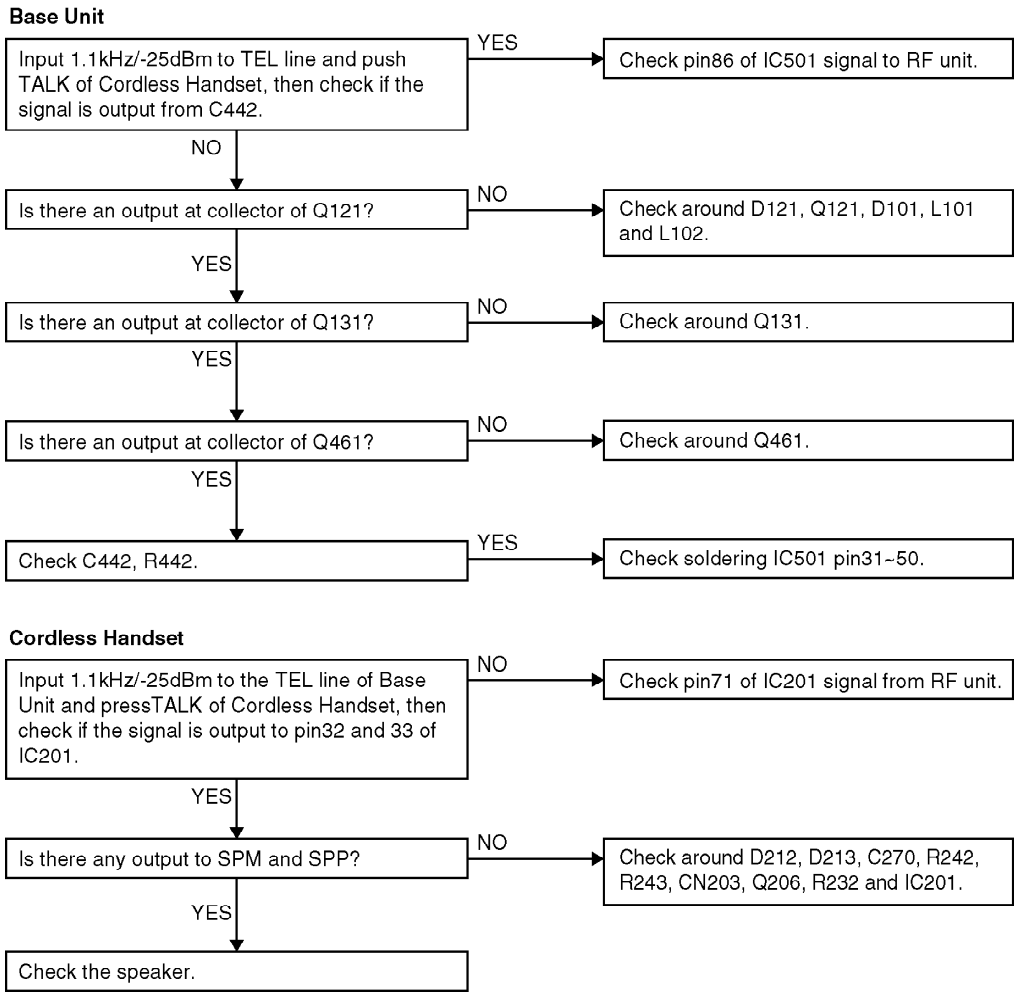
8.11.7. RF-DSP Interface Signal Wave Form



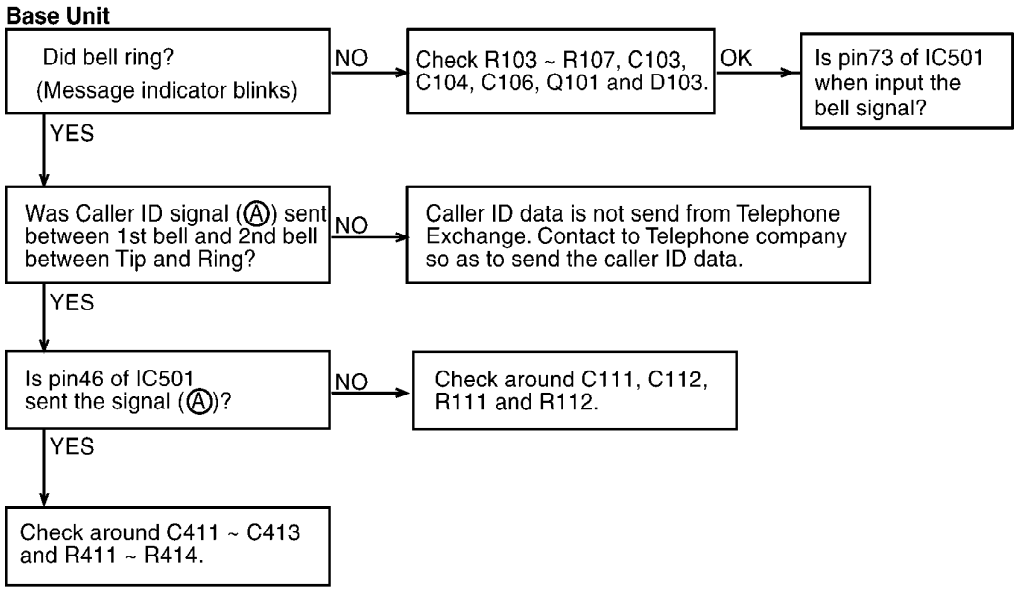
8.12. Check Cordless Handset Voice Transmission

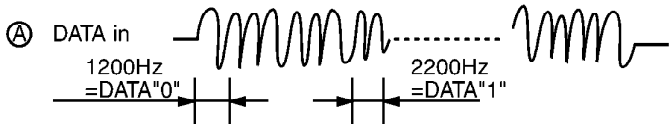

Base Unit
Input 1.1kHz/-45dBm to the microphone of Cordless Handset and TALK, then check if the signal is output to pin41 of IC501.
NO
Check pin85 of IC501 signal from RF unit.
YES
Is there an output at base of Q131?
NO
Check around C431, C432 and R433.
YES
Is there an output at collector of Q131?
NO
Check around D121, Q131 and Q121.
YES
Check Q121, D101, CN101 and TEL cord.
Cordless Handset
Does the microphone of Cordless Handset work?
NO
Check around MIC.
YES
Is there an input at pin41 and pin42 of IC201 when 1.1kHz/-45dBm is input to the microphone of Cordless Handset?
YES
Check pin72 of IC201 signal to RF unit.
NO
Is the pin64 of IC201 High?
NO
Check around C277, R249, R250, C230, C232, R226, R229, R231, R220 and IC201.
YES
Check around CN203, Q206.

8.13. Check Cordless Handset Voice Reception


Base Unit
Input 1.1kHz/-25dBm to TEL line and push TALK of Cordless Handset, then check if the signal is output from C442.
YES
Check pin86 of IC501 signal to RF unit.
NO
Is there an output at collector of Q121?
NO
Check around D121, Q121, D101, L101 and L102.
YES
Is there an output at collector of Q131?
NO
Check around Q131.
YES
Is there an output at collector of Q461?
NO
Check around Q461.
YES
Check C442, R442.
YES
Check soldering IC501 pin31~50.
Cordless Handset
Input 1.1kHz/-25dBm to the TEL line of Base Unit and pressTALK of Cordless Handset, then check if the signal is output to pin32 and 33 of IC201.
NO
Check pin71 of IC201 signal from RF unit.
YES
Is there any output to SPM and SPP?
NO
Check around D212, D213, C270, R242, R243, CN203, Q206, R232 and IC201.
YES
Check the speaker.

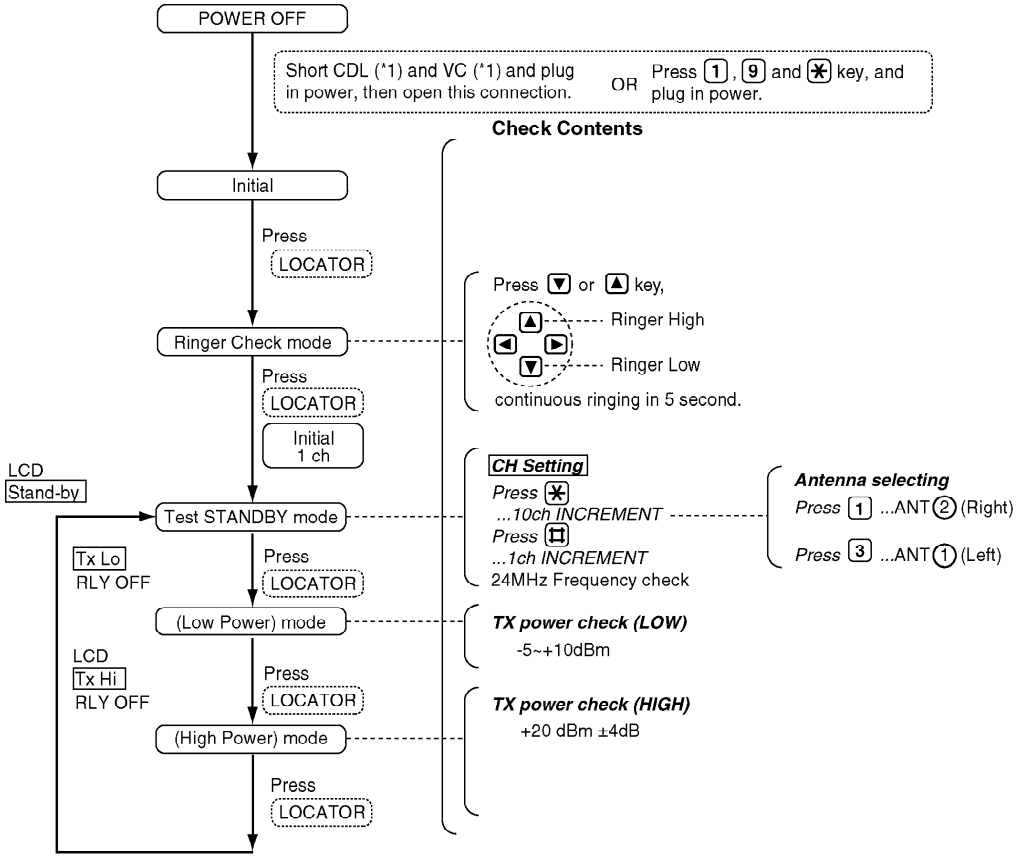
8.14. Check Call ID


Base Unit
Did bell ring?
(Message indicator blinks)
NO
Check R103 ~ R107, C103, C104, C106, Q101 and D103.
OK
Is pin73 of IC501 when input the bell signal?
YES
Was Caller ID signal (Ⓐ) sent between 1st bell and 2nd bell between Tip and Ring?
NO
Caller ID data is not send from Telephone Exchange. Contact to Telephone company so as to send the caller ID data.
YES
Is pin46 of IC501 sent the signal (Ⓐ)?
NO
Check around C111, C112, R111 and R112.
YES
Check around C411 ~ C413 and R411 ~ R414.



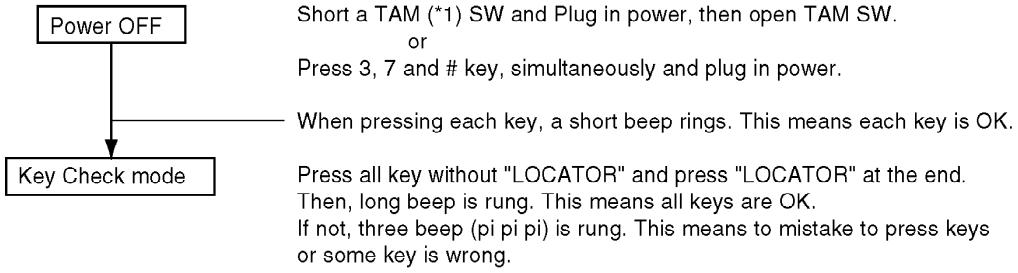
9. TEST MODE AND ADJUSTMENT

9.1. Test Mode Flow Chart for Base Unit



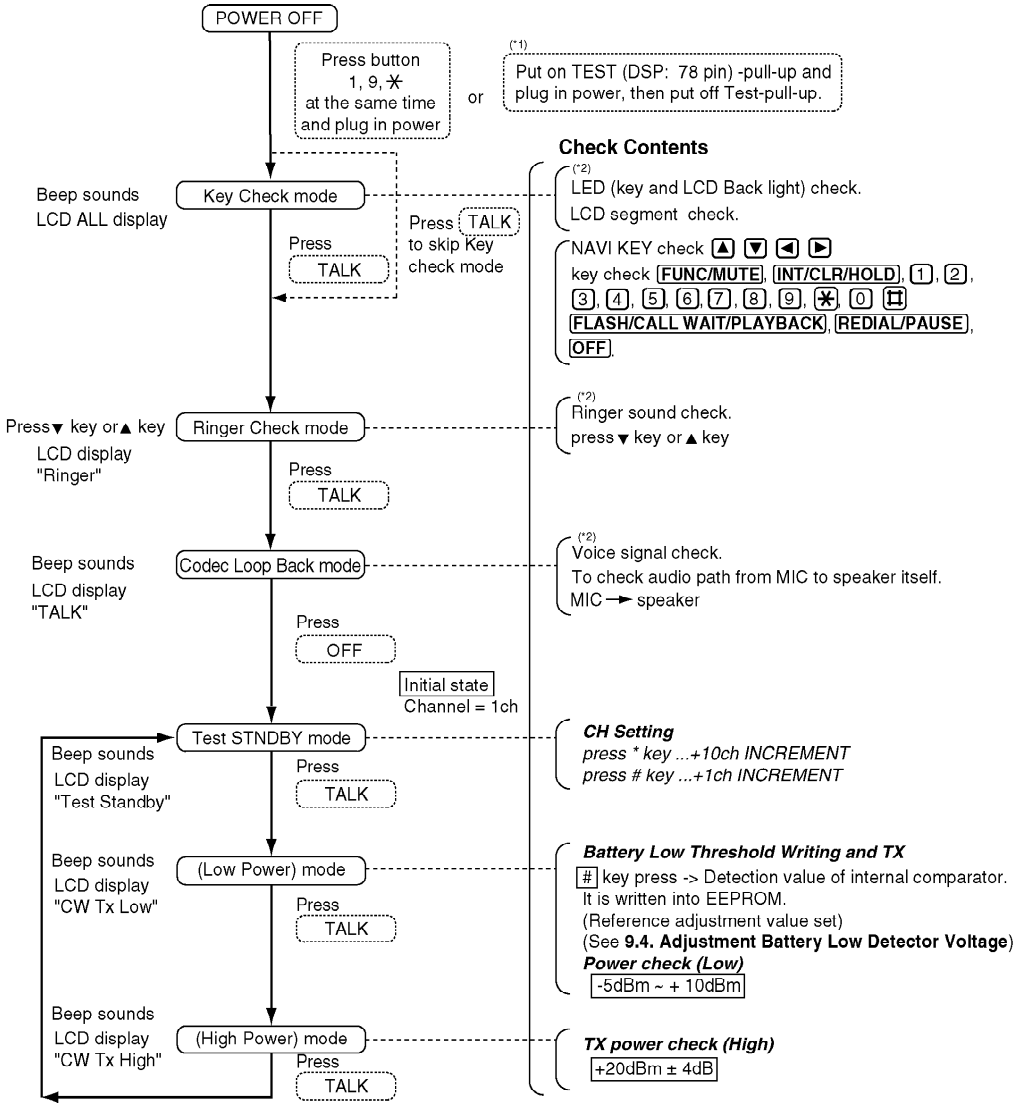
(*1) See Base Unit Reference Drawing ().

9.2. Key Check Mode


Power OFF
Key Check mode
Short a TAM (*1) SW and Plug in power, then open TAM SW.
or
Press 3, 7 and # key, simultaneously and plug in power.
When pressing each key, a short beep rings. This means each key is OK.
Press all key without "LOCATOR" and press "LOCATOR" at the end.
Then, long beep is rung. This means all keys are OK.
If not, three beep (pi pi pi) is rung. This means to mistake to press keys
or some key is wrong.

(*1) See Base Unit Reference Drawing ().

9.3. Test Mode Flow Chart for Cordless Handset



(*1) See Cordless Handset Reference Drawing ().
(*2) Special check method for Cordless Handset individually.

Cross Reference:
Adjustment Battery Low Detector Voltage ()

9.4. Adjustment Battery Low Detector Voltage

After replacing handset's DSP (IC201) and EEPROM, Re-writing Battery Low voltage to EEPROM is required.
Following Test mode flow chart (Refer to Test Mode Flow Chart for Cordless Handset ()),
DC power supply and Battery connector are required in this adjustment.
1. Set 3.9V for DC power supply.
2. Place handset in test mode.
3. Press "TALK" key 4 times to TX-Low mode. (CW Tx Low is displayed on LCD)
4. Set 3.51V for DC power supply.
*** Check voltage at battery connector, because some voltage drop is happened, using long or thin cable.**
5. Press "#"key to write voltage value in EEPROM.
6. Turn power off. Then this value is available.

NOTE:

Refer to Cordless Handset Reference Drawing () for connection of DC power source and voltmeter.

9.5. Base Unit Reference Drawing

When connecting the Simulator and Equipments for checking, please refer to below.

Note: (*1) is refered to No.2 of Check Table for RF Block ()

9.6. Cordless Handset Reference Drawing

When connecting the Simulator and Equipments for checking, please refer to below.

Note: (*1) is refered to No.2 of Check Table for RF Block ()

9.7. Frequency Table

(TDD: time division duplex)

Channel	TX/RX Frequency (GHz)	Channel	TX/RX Frequency (GHz)
1	2.4015	13	2.4375
2	2.4045	14	2.4405
3	2.4075	15	2.4435
4	2.4105	16	2.4465
5	2.4135	17	2.4495
6	2.4165	18	2.4525
7	2.4195	19	2.4555
8	2.4225	20	2.4585
9	2.4255	21	2.4615
10	2.4285	22	2.4645
11	2.4315	23	2.4675
12	2.4345	24	2.4705

10. DESCRIPTION

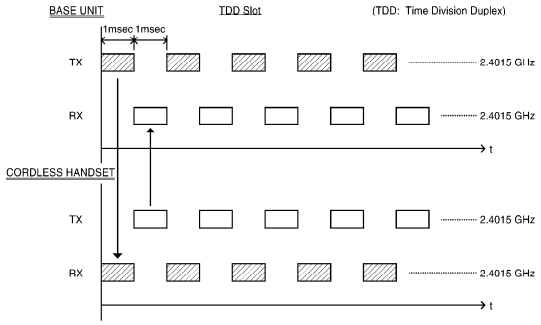
10.1. Frequency

The frequency range of 2.4015 GHz ~ 2.4705 GHz is used. Transmitting and receiving channel between base unit and cordless handset is same frequency. Refer to the Frequency Table.

10.2. Time Division Duplex (TDD) operation

Transmission/reception between the base unit and cordless handset is performed by time-sharing as shown in Fig. 10.
1 slot time of transmission and reception is 1mS.Same frequency is used in transmitting and receiving. The figure shows an example; the frequency of 1ch is used in transmitting between the base unit and cordless handset.

Fig. 10



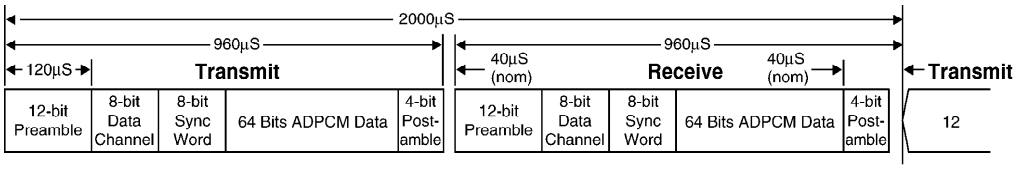
10.2.1. TDD Frame Format

The TDD frame is 2mS in length, and is composed of two symmetrical 960 μ S TX and RX subframes. Each subframe contains 96 bits of 10 μ S duration, with 40 μ S guard times

between both TX and RX subframes.
Each subframe consists of the following five fields:

- **A 12-bit Preamble field**
- **An 8-bit Data Channel field**
- **An 8-bit Sync Word**
- **A 64-bit ADPCM Payload**
- **A 4-bit Post-amble**

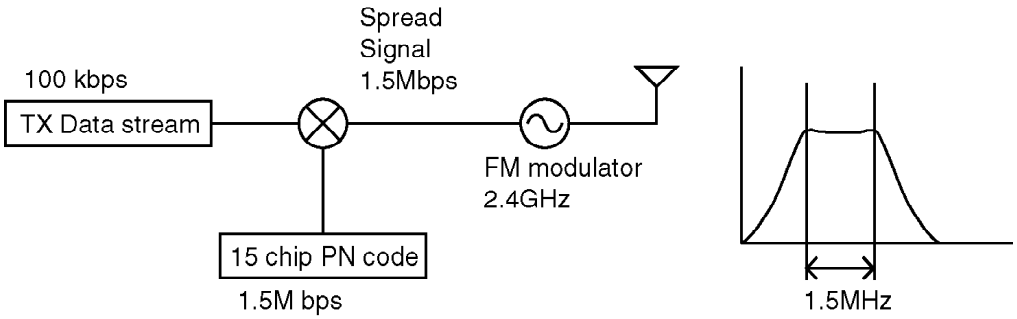
Both the 8-bit sync word and 8-bit data channel are programmable via the DSP interface. In addition, the 64-bit payload can be filled either with ADPCM voice data, or can be used by the host DSP as a fast data channel between base and cordless handset.



10.3. Spread Spectrum

Transmission and reception are operated using the spread spectrum method.
DSS (Digital Spread Spectrum)
Mixing the original signal with the pseudo random noise code (PN code) works the spread spectrum. In this system PN code is 15 chip. Although the band width is spread fifteen times, the power level per channel becomes lower.

Fig. 11



10.4. Signal Flowchart in the Whole System

Reception

CN101 of the base unit is connected to the TEL line, and the signal is input through the bridge diode D101. While talking the relay (Q121) is turned ON and amplified at the amplifiers Q461, then led to DSP (IC501). DSP generates ADPCM signal. The ADPCM signal is input to RFIC (IC101) of RF UNIT, and is mixed with pseudo random noise code (PN code) to spread the spectrum. RFIC outputs FSK modulated RF signal. The RF signal is passed through the balun (T101) and filter (L107) to the T/R switch (IC109). And the RF signal amplifies by the power amplifier (IC105) and fed into T/R switch (IC110) and passes through filter (L106) to Diversity ANTENNA. As for the cordless handset, RF signal from the antenna passes through filter (L106)

and switch by T/R switch (IC110) to LNA (IC106). The RF signal is amplified by LNA (IC106) and switched by T/R switch (IC109) and input to RFIC passing through filter (L107) and the balun (T101) to perform the de-spread, then input to DSP (IC201). DSP performs ADPCM decoding to convert the signal into the voice signal, then it is output to the speaker.

Transmission

The voice signal input from the microphone is led to DSP (IC201). The DSP generates ADPCM signal. As well as the reception, it is converted into the RF signal by RFIC (IC101). Passing through the balun (T101) and filter (L107), to the T/R switch (IC109). And the RF signal amplifies by the power amprifier (IC105) and fed into T/R switch (IC110) and passes through filter (L106) to ANTENNA. As for the base unit, RF signal from the Diversity antenna passes through filter (L106) and switch by T/R switch (IC110) to LNA (IC106). The RF signal is amplified by LNA (IC106) and switched by T/R switch (IC109) and is input to RFIC (IC101) passing through filter (L107) and the balum (T101) to perform the de-spread, then input to DSP (IC201). DSP performs ADPCM decoding to convert the signal into the voice signal. The voice signal is amplified at the TX amplifier (Q131), then output to the TEL line (CN101) through the relay (Q121) and bridge (D101).

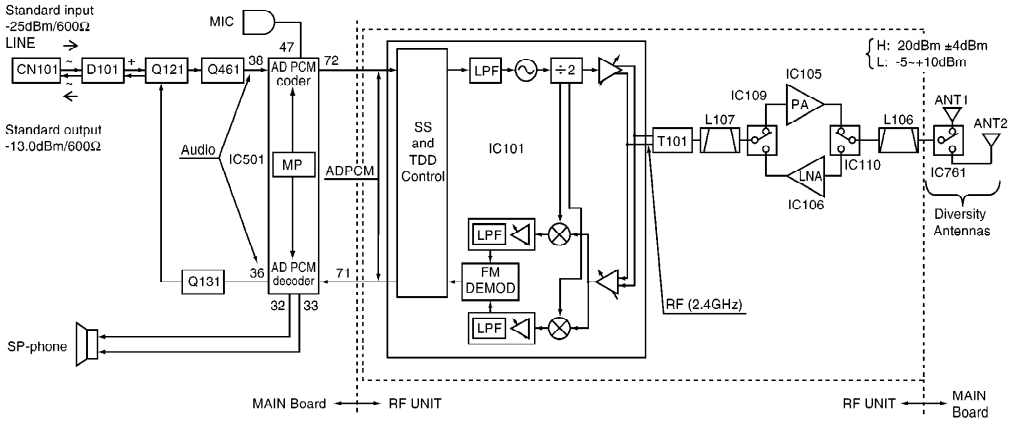


Fig. 12-1 BASE UNIT

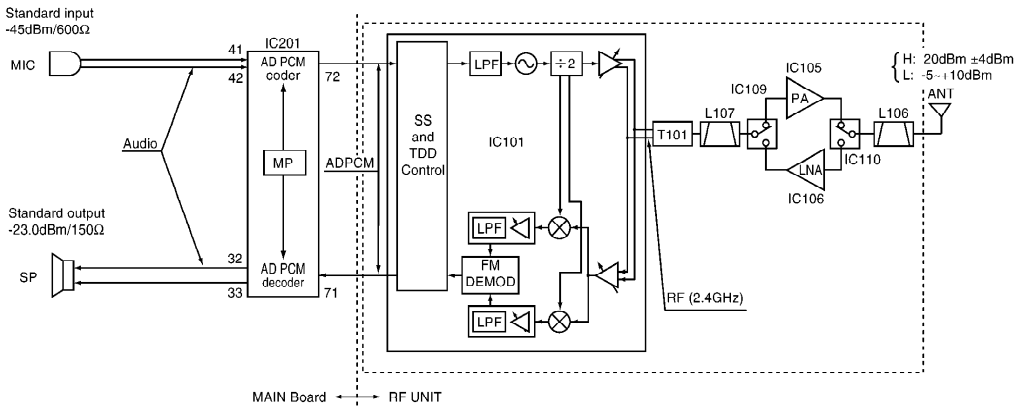
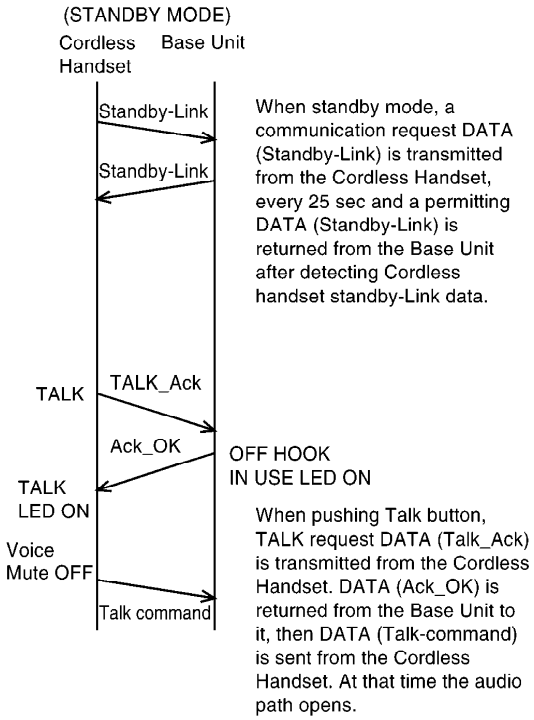


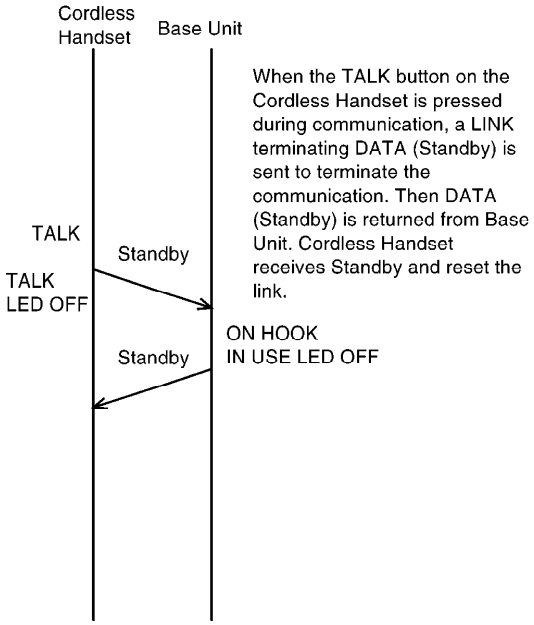
Fig. 12-2 CORDLESS HANDSET

10.5. Explanation of DSP Data Communication

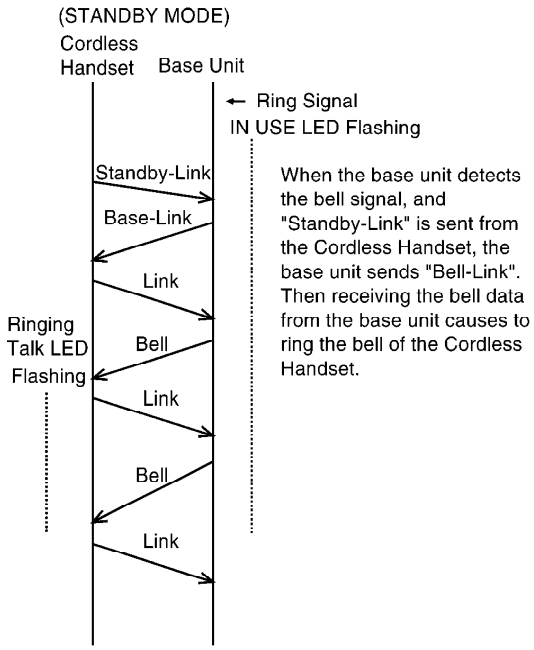
10.5.1. Calling


(STANDBY MODE)
Cordless Handset
Base Unit
Standby-Link
Standby-Link
When standby mode, a communication request DATA (Standby-Link) is transmitted from the Cordless Handset, every 25 sec and a permitting DATA (Standby-Link) is returned from the Base Unit after detecting Cordless handset standby-Link data.
TALK
TALK_Ack
Ack_OK
OFF HOOK
IN USE LED ON
TALK
LED ON
When pushing Talk button, TALK request DATA (Talk_Ack) is transmitted from the Cordless Handset. DATA (Ack_OK) is returned from the Base Unit to it, then DATA (Talk-command) is sent from the Cordless Handset. At that time the audio path opens.
Voice
Mute OFF
Talk command

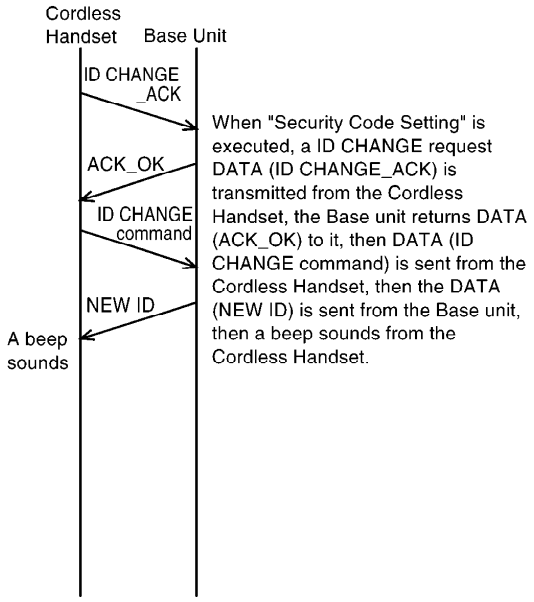
10.5.2. To Terminate Communication


Cordless Handset
Base Unit
When the TALK button on the Cordless Handset is pressed during communication, a LINK terminating DATA (Standby) is sent to terminate the communication. Then DATA (Standby) is returned from Base Unit. Cordless Handset receives Standby and reset the link.
TALK
Standby
TALK
LED OFF
ON HOOK
IN USE LED OFF
Standby

10.5.3. Ringing



10.5.4. ID Change


Cordless Handset
Base Unit
ID CHANGE _ACK
ACK_OK
ID CHANGE command
NEW ID
A beep sounds
When "Security Code Setting" is executed, a ID CHANGE request DATA (ID CHANGE_ACK) is transmitted from the Cordless Handset, the Base unit returns DATA (ACK_OK) to it, then DATA (ID CHANGE command) is sent from the Cordless Handset, then the DATA (NEW ID) is sent from the Base unit, then a beep sounds from the Cordless Handset.

11. BLOCK DIAGRAM (Base Unit)

12. CIRCUIT OPERATION (Base Unit)

General Description:
(DSP, MEMORY) is a digital speaker-phone/speech/signal processing system that implements all the functions of speech compression, record and playback, and memory management required in a digital telephone answering machine.

12.1. DSP(Digital Speech/Signal Processing) Circuit: IC501

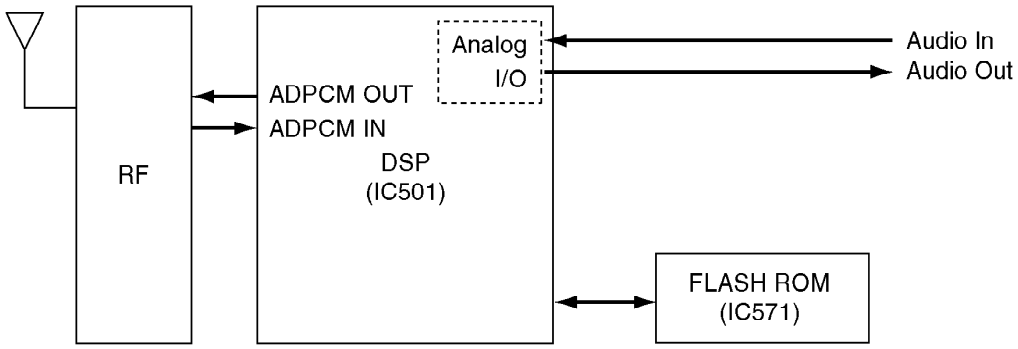
The DSP system comprises of following.

— Host Processor.

— Digital Signal Processor which includes the firmware implemented functions.

— FLASH MEMORY(IC571), which is used for stored voice messages and synthesized voice.

Circuit Diagram



The DSP system is fully controlled by a host processor IC501. The host processor provides activation and control of all that functions as follows.

- Voice Message Recording

The DSP system use a proprietary speech compression technique to record and store voice message in FLASH MEMORY.

An error correction algorithm is used to enable playback of these messages from the FLASH MEMORY.

- DTMF Detection

The DTMF detection is implemented by the DSP system in software. The DTMF detection is performed during Record, Playback, and Line Monitoring modes of operation.

- Synthesized Voice

The DSP implements synthesized Voice, utilizing the built in speech detector and an FLASH MEMORY, which stored the vocabulary.

- Caller ID and Call Waiting CID demodulation

The DSP implements monitor and demodulate the FSK signals that provide CID information from the Central Office.

- Transmit and Receive ADPCM Data

This DSP implement ADPCM.

12.2. Flash Memory (IC571)

Following information data is stored.

- Voice Signal

ex: Pre-recorded Greeting message, Incoming message

- Telephone number, etc.

ex: Telephone Directory number, Caller ID data, ID code

- Settings

ex: message numbers, caller ID numbers, pulse tone dial

12.3. Power Supply Circuit

Function:

Power from the AC adaptor passes through a regulating consisting of IC301.

Circuit Operation:

IC301 is a regulated power supply. The voltage at point A is regulated to 3.6V by IC301.

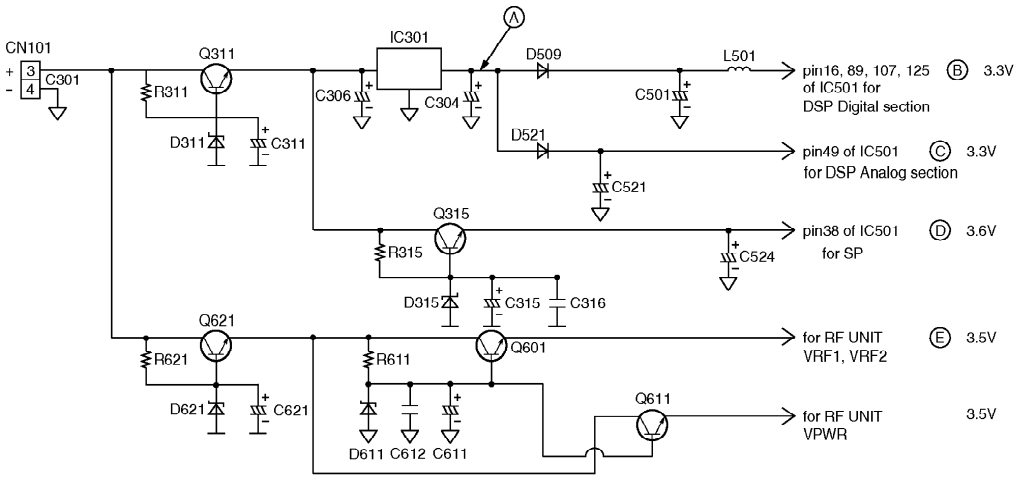
The voltage at point B is dropped by D509 to 3.3V.

The voltage at point C is dropped by D521 to 3.3V.

The voltage at point D is dropped by Q315 to 3.6V

The voltage at point E is dropped by Q601 to 3.5V

Circuit Diagram



12.4. Reset Circuit

Function:

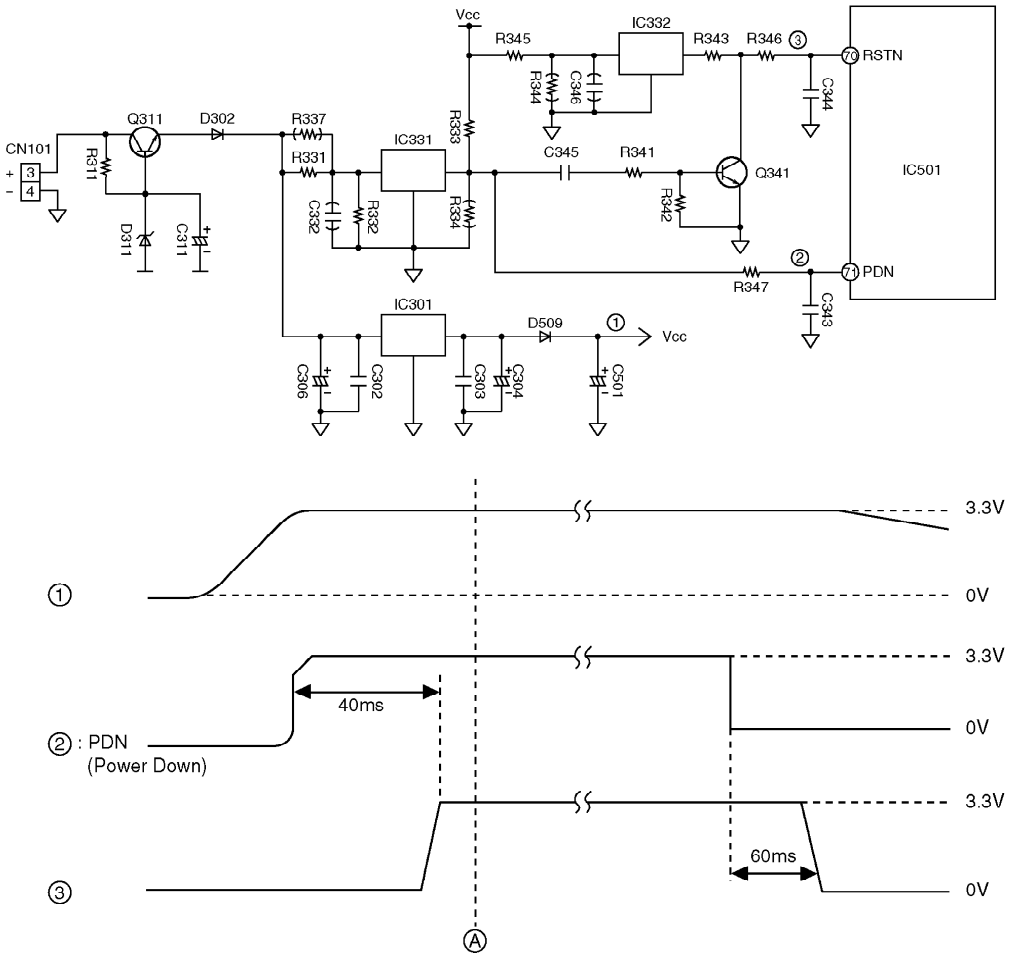
This circuit is used for to initialize the microcomputer when it incorporates an AC adaptor.

Circuit Operation:

When the AC Adaptor is inserted into the unit, then the voltage is shifted by IC301, D509 and power is supplied to the DSP.

The set can operate beyond point A in the circuit voltage diagram.

Circuit Diagram



12.5. Locator/Intercom Mode

1. When the base unit LOCATOR/INTERCOM button is pressed, a call monitor signal (intercom sound) is output from DSP (SPP, SPN). Thus a monitor tone is heard from the speaker.
2. At this time, "Paging" message is displayed on LCD.
3. The receiving signal flows:

RF → DSP(CADPCM_OUT) → DSP(SPOUTP/SPOUTN) → SP
DSP(CADPCM_OUT) → DSP(HSSPOUT/LOUT0) → BASE-HANDSET SP

4. The transmission signal flows:

MIC → DSP(MIP, MIN)
HS_MIC → DSP(HSMIP/HSMIN)
DSP(MIP, MIN) / DSP(HSMIP/HSMIN) → DSP(ADPCM_IN) → RF

12.6. Telephone Line Interface

Telephone Line Interface Circuit:

Function

- Bell signal detection

- ON/OFF hook and pulse dial circuit

- Side tone circuit

- Auto-disconnect circuit/Parallel connection detection circuit

Bell signal detection and OFF HOOK circuit:

In the idle mode, Q121 is open to cut the DC loop current and decrease the ring load. When ring voltage appears at the Tip (T) and Ring (R) leads (When the telephone rings), the AC ring voltage

is transferred as follows:
T → L101 → R103 → C103 → Q101 → pin73 of IC501.
When the CPU (DSP) detects a ring signal, Q121 turns on, thus providing an off-hook condition (active DC current flow through the circuit) and the following signal flow is for the voice signal.
T → D101 → Q121 → Q131 → R139/R140 → C139 → RX.

- ON HOOK

Q121 is open, Q121 is connected as to cut the DC loop current and to cut the voice signal. The unit is consequently in an on-hook condition.

Pulse Dial Circuit:

DSP (RYL) turns Q4 ON/OFF to make the pulse dialing.

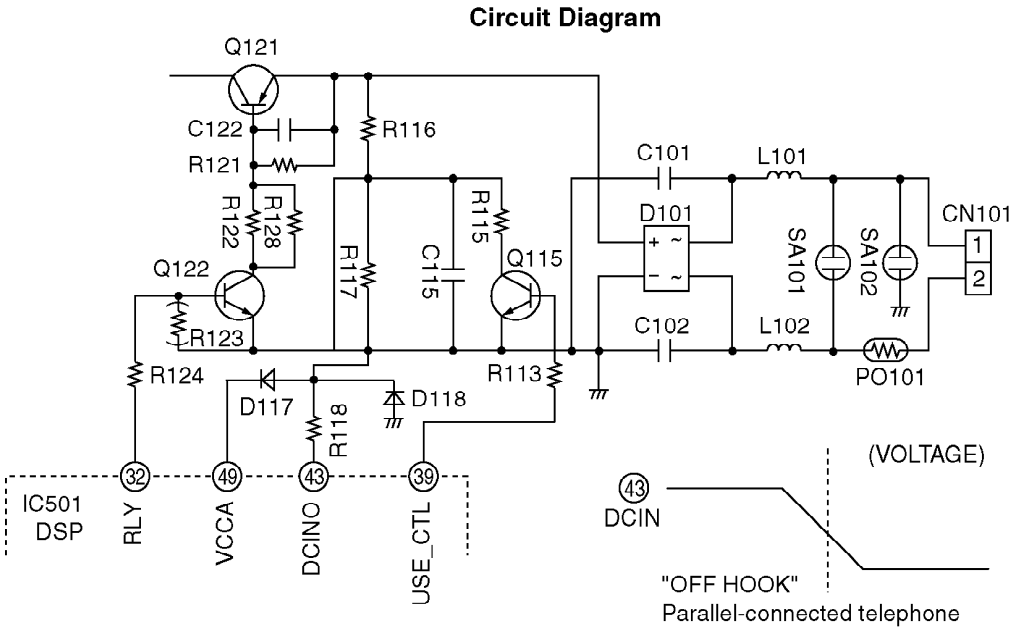
Side Tone Circuit:

Basically this circuit prevents the TX signal from feeding back to RX signal.
As for this unit, TX signal feed back from Q131 is canceled by the echo canceller of DSP.

See CPU DATA(Base Unit) ()

12.7. Auto Disconnect Circuit

Function:
This circuit is used to detect the fact that another telephone connected to the same line is OFF-HOOK while the unit is in a receiving status or OGM transmitting status.
Circuit Operation:
The voltage pin43 of IC501 is monitored. If a parallel-connected telephone is put into an OFF HOOK status, the presence/absence of a parallel connection is determined when the voltage changes by 0.2V or more.
When the set detects the parallel-connected telephone is OFF HOOK status, the line is disconnected.



12.8. Parallel Connection Detection Circuit

Function:

In order to disable call waiting and stutter tone functions when using telephones connected in parallel, it is necessary to have a circuit that judges whether a telephone connected in parallel is in use or not. This circuit determines whether the telephone connected in parallel is on hook or off hook by detecting changes in the T/R voltage.

Circuit Operation:

Parallel connection detection when on hook:

When on hook Q115 is ON, the voltage is monitored pin43 of IC501. There is no parallel connection if the voltage is 1.65V or higher, while a parallel connection is deemed to exist if the voltage is lower.

Parallel connection detection when off hook:

When off hook Q115 is OFF, the voltage is monitored pin43 of IC501; the presence/absence of a parallel connection is determined when the voltage changes by 0.2V or more.

12.9. Calling Line Identification Circuit (Caller ID)

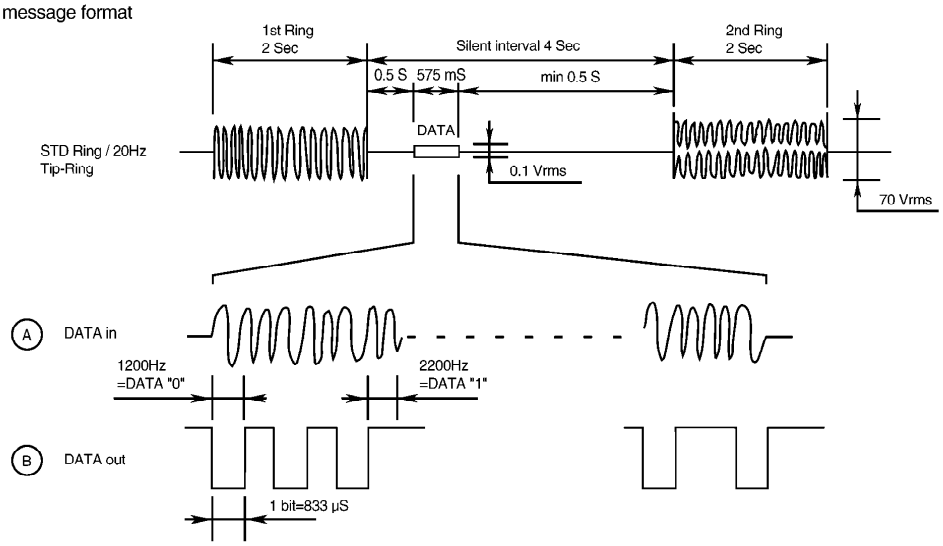
Function:

The caller ID is a chargeable ID which the user of a telephone circuit obtains by entering a contract with the telephone company to utilize a caller ID service. For this reason, the operation of this circuit assumes that a caller ID service contract has been entered for the circuit being used.

The data for the caller ID from the telephone exchange is sent during the interval between the first and second rings of the bell signal. The data from the telephone exchange is a modem signal which is modulated in an FSK (Frequency Shift Keying) format. Data “0” is a 1200Hz sine wave, and data 1 a 2200Hz sine wave.

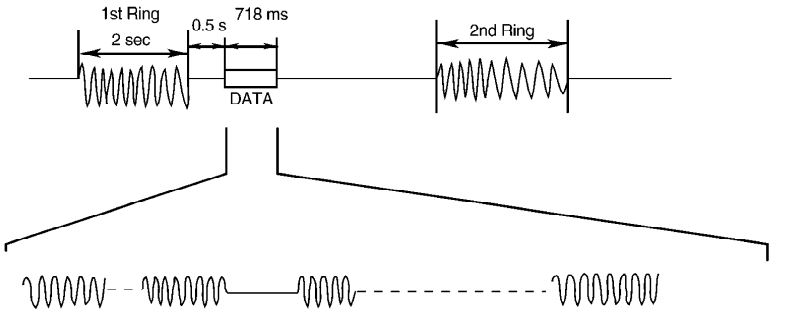
There are two type of the message format which can be received: i.e. the single message format and plural message format. The plural message format allows to transmit the name and data code information in addition to the time and telephone number data.

● Single message format



month		day		hour		minute		number
04	-	15	-	16	-	35	-	2013487000

● Plural message format



DATA CODE	NAME
201	John Smith

month		day		hour		minute		number
04	-	16	-	16	-	35	-	2013487000

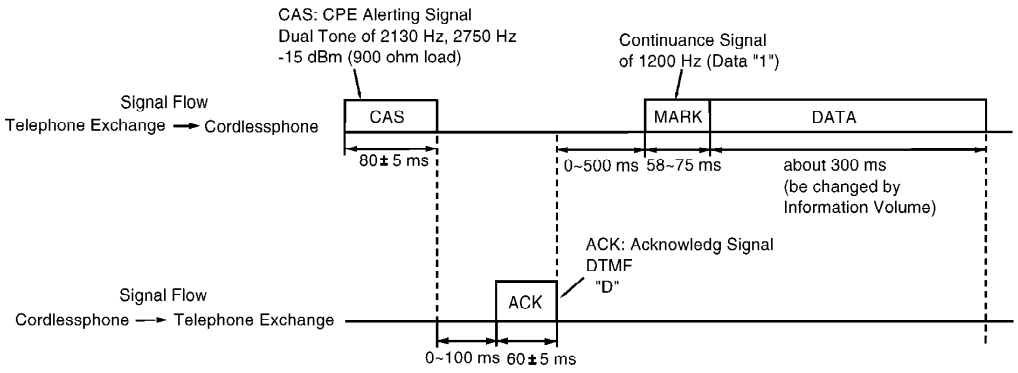
Call Waiting

Calling Identity Delivery on Call Waiting (CIDCW) is a CLASS service that allows a customer, while off-hook on an existing call, to receive information about a calling party on a waited call. The transmission of the calling information takes place almost immediately after the customer is alerted to the new call so the customer can use this information to decide whether to take the new call.

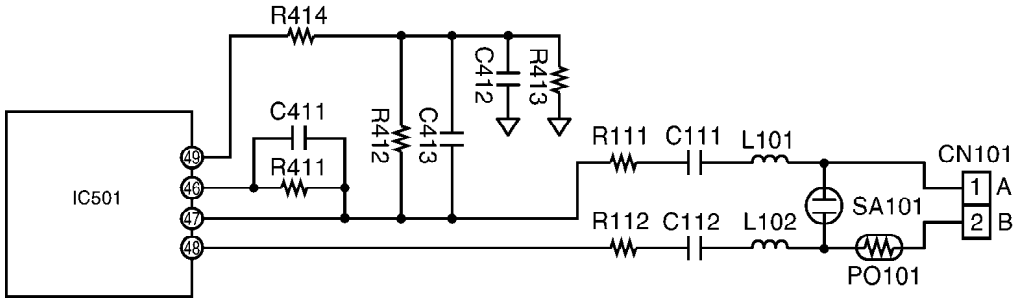
Function:

The CAS signal flows from T/R → R111, R112 → C111, C112 → pin47, 48 of IC501 and the ACK (DTMF signal) is returned to the telephone exchange. The telephone exchange that received the ACK can send the data in the same manner as the caller ID. If the unit deems that a telephone connected in parallel is in use, ACK is not returned even if CAS is received, and the information for the second and subsequent callers is not displayed on the cordless handset display.

Call Waiting Format



Circuit Diagram



13. BLOCK DIAGRAM (Cordless Handset)

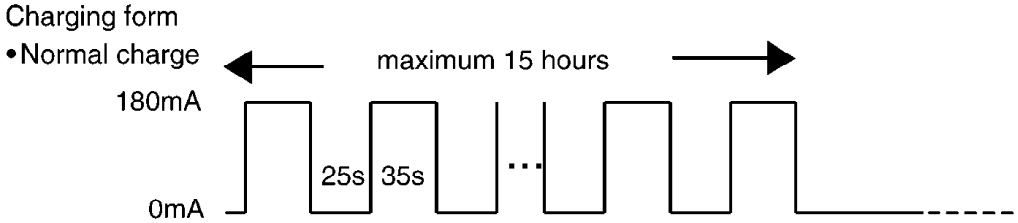
14. CIRCUIT OPERATION (Cordless Handset)

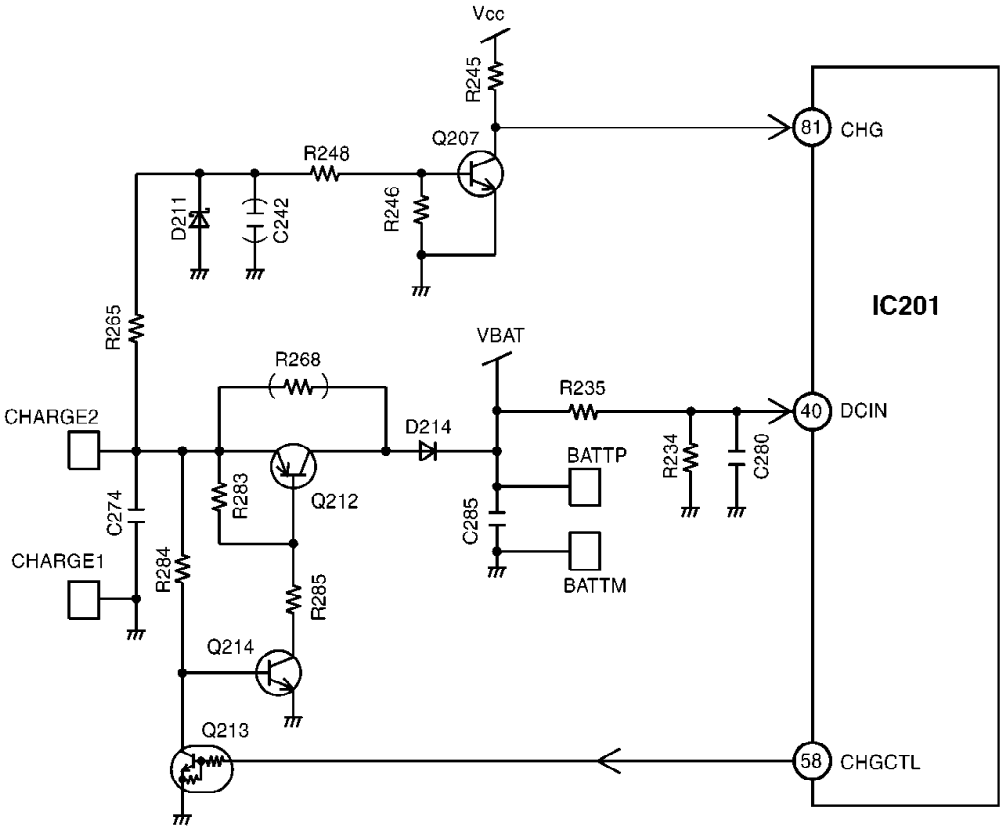
14.1. Power Supply Circuit

Voltage is supplied separately to each block.

14.2. Charge Circuit

When the cordless handset is put on the charger, the power is supplied from CHARGE2 and CHARGE1 terminals to charge the battery via Q212 and D214.
The voltage between CHARGE2 and CHARGE1 flows R265 -> R248 -> Q207 -> pin81 of IC201, where the charge is detected.
Then IC201 calculates the battery consumption amount from the previous charge, and it controls Q212/Q213/Q214 by pin58 of IC201 until charging is complete.



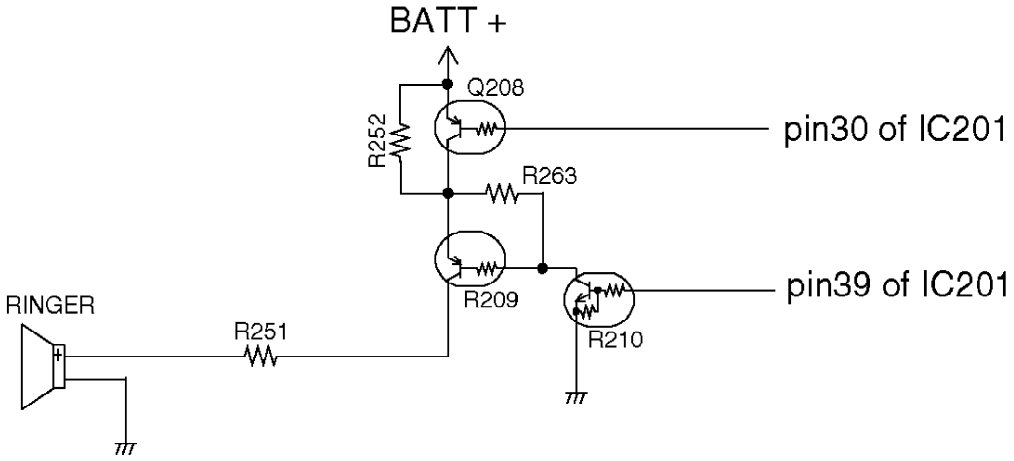


Pin40 of IC201 monitors the battery voltage and detects BATT LOW at 3.50V.

14.3. Ringer Circuit

If the ringer volume is set to low and an alarm tone is output from pin39 of IC201(DSP) and input to Q209. Then Q208 is turned off. If the ringer volume is set to high, Q208 turns on and results in a louder beep tone.

Circuit Diagram



14.4. Sending Signal

The voice signal from the microphone input to pin42(CIDIP) and pin41(CIDIN) of IC201(DSP).

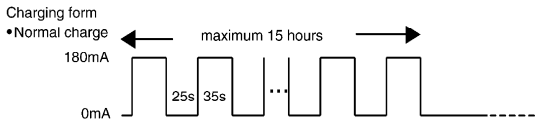
CN203 is the headphone jack. When the headphone is connected, the Q206 detect it. The input from the microphone of the cordless handset (CIDIN, CIDIP) is cut and the microphone signal from the headphone is input to pin47 of IC201(HMIN). Also the power for the microphone is supplied from Q211, and the power is turned OFF on standby.
Signal Route: refer to "Cordless Handset TX" or "Headset of cordless Handset TX" in SIGNAL ROUTE ().

14.5. Reception Signal Circuit

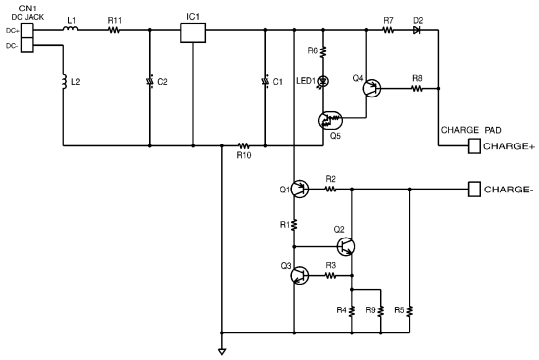
The received signal from the base unit is output from pins 33(SPN) and 32(SPP) of IC201(DSP) as the voice signal. SPN is the inverse output of SPP, and the speaker is driven by SPN and SPP. CN203 is the headphone jack. When the headphone is connected to this jack, the output to the speaker of the cordless handset (SPN, SPP) is cut and the voice signal is output to the headphone (HSOUT) only.
Signal Route: refer to "Cordless Handset TX" or "Headset of cordless Handset TX" in SIGNAL ROUTE ().

15. CIRCUIT OPERATION (Charger)

The voltage from the AC is supplied to the charge circuits. Normal charge (average 90mA at the Battery) of maximum 15-hours is started soon after the Cordless Handset is plased on the Charger.



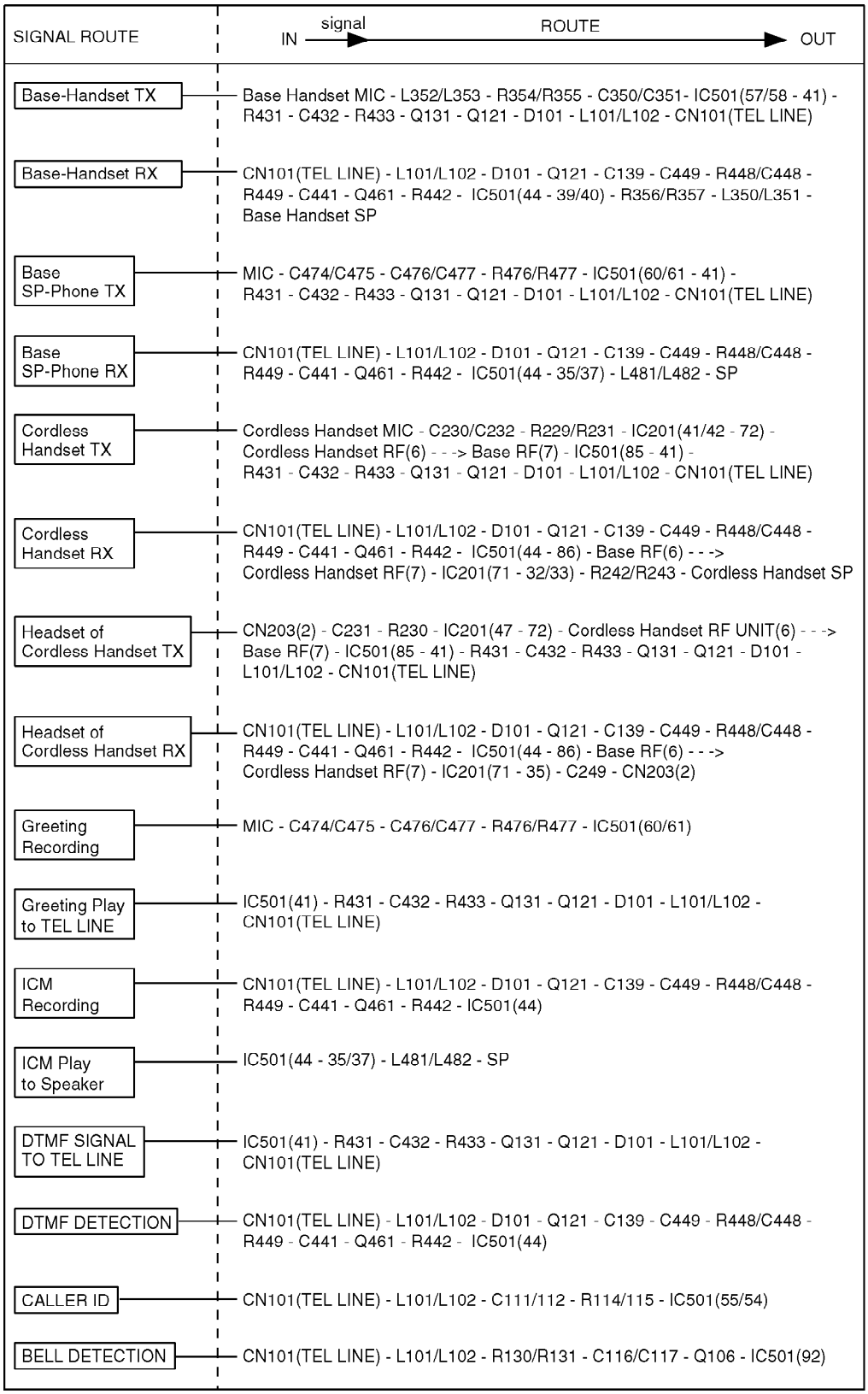
Q4 is detect the ON-HOOK state (Cordless Handset is plased on base unit), then Q5 turns ON and LED1 lights up.



Q1, Q2 and Q3 are regulate the charge current.
The route for this is as follows: DC+pin of CN1 → R11 → IC1 → R7 → D2 → CHARGE+pad → Cordless Handset → CHARGE pad → Q2 → R4 and R9 → DC-pin of CN1.

16. SIGNAL ROUTE

Each signal route is as follows.


SIGNAL ROUTE
IN
signal
ROUTE
OUT
Base-Handset TX
Base Handset MIC - L352/L353 - R354/R355 - C350/C351- IC501(57/58 - 41) - R431 - C432 - R433 - Q131 - Q121 - D101 - L101/L102 - CN101(TEL LINE)
Base-Handset RX
CN101(TEL LINE) - L101/L102 - D101 - Q121 - C139 - C449 - R448/C448 - R449 - C441 - Q461 - R442 - IC501(44 - 39/40) - R356/R357 - L350/L351 - Base Handset SP
Base SP-Phone TX
MIC - C474/C475 - C476/C477 - R476/R477 - IC501(60/61 - 41) - R431 - C432 - R433 - Q131 - Q121 - D101 - L101/L102 - CN101(TEL LINE)
Base SP-Phone RX
CN101(TEL LINE) - L101/L102 - D101 - Q121 - C139 - C449 - R448/C448 - R449 - C441 - Q461 - R442 - IC501(44 - 35/37) - L481/L482 - SP
Cordless Handset TX
Cordless Handset MIC - C230/C232 - R229/R231 - IC201(41/42 - 72) - Cordless Handset RF(6) - - -> Base RF(7) - IC501(85 - 41) - R431 - C432 - R433 - Q131 - Q121 - D101 - L101/L102 - CN101(TEL LINE)
Cordless Handset RX
CN101(TEL LINE) - L101/L102 - D101 - Q121 - C139 - C449 - R448/C448 - R449 - C441 - Q461 - R442 - IC501(44 - 86) - Base RF(6) - - -> Cordless Handset RF(7) - IC201(71 - 32/33) - R242/R243 - Cordless Handset SP
Headset of Cordless Handset TX
CN203(2) - C231 - R230 - IC201(47 - 72) - Cordless Handset RF UNIT(6) - - -> Base RF(7) - IC501(85 - 41) - R431 - C432 - R433 - Q131 - Q121 - D101 - L101/L102 - CN101(TEL LINE)
Headset of Cordless Handset RX
CN101(TEL LINE) - L101/L102 - D101 - Q121 - C139 - C449 - R448/C448 - R449 - C441 - Q461 - R442 - IC501(44 - 86) - Base RF(6) - - -> Cordless Handset RF(7) - IC201(71 - 35) - C249 - CN203(2)
Greeting Recording
MIC - C474/C475 - C476/C477 - R476/R477 - IC501(60/61)
Greeting Play to TEL LINE
IC501(41) - R431 - C432 - R433 - Q131 - Q121 - D101 - L101/L102 - CN101(TEL LINE)
ICM Recording
CN101(TEL LINE) - L101/L102 - D101 - Q121 - C139 - C449 - R448/C448 - R449 - C441 - Q461 - R442 - IC501(44)
ICM Play to Speaker
IC501(44 - 35/37) - L481/L482 - SP
DTMF SIGNAL TO TEL LINE
IC501(41) - R431 - C432 - R433 - Q131 - Q121 - D101 - L101/L102 - CN101(TEL LINE)
DTMF DETECTION
CN101(TEL LINE) - L101/L102 - D101 - Q121 - C139 - C449 - R448/C448 - R449 - C441 - Q461 - R442 - IC501(44)
CALLER ID
CN101(TEL LINE) - L101/L102 - C111/112 - R114/115 - IC501(55/54)
BELL DETECTION
CN101(TEL LINE) - L101/L102 - R130/R131 - C116/C117 - Q106 - IC501(92)

17. CPU DATA(Base Unit)

17.1. IC501

Pin	Description	I/O	High	Hi-z	Low
1	BANK1	D.O	High	-	Low
2	BANK2	D.O	High		Low
3	KEYA	D.O	Active	Not	-
4	KEYB	D.O	Active	Not	-
5	KEYC	D.O	Active	Not	-
6	KEYD	D.O	Active	Not	-
7	KEYE	D.O	Active	Not	-
8	KEYF	D.O	Active	Not	-
9	UCFG0	D.O	High	-	Low
10	UCFG1	D.O	High	-	Low
11	UCFG2	D.O	High	-	Low
12	UCFG3	D.O	High	-	Low
13	LCD_REG	D.O	Data	-	Instruct
14	LCD_CSB	D.O	Not	-	Active
15	LCD_RST	D.O	Not	-	Reset
16	VCC	VCC	VCC	-	-
17	GND	GND	-	-	GND
18	SPI_DIN	D.I	High	-	Low
19	SPI_EN	D.O	Not	-	Active
20	SPI_CLK	D.O	High	-	Normal
21	SPI_DOUT	D.O	High	-	Low
22	HOOK	D.I	OFF HOOK	-	ON HOOK
23	NC	D.O	-	-	Normal
24	NC	D.O	-	-	Normal
25	NC	D.O	-	-	Normal
26	NC	D.O	-	-	Normal
27	NC	D.O	-	-	Normal
28	NC	D.O	-	-	Normal
29	LCD_DAT	D.O	High	-	Low
30	LINE_SZ	D.O	High	-	Low
31	LCD_CLK	D.O	High	-	Low
32	RLY	D.O	High	-	Low
33	USE_CTL	D.O	High	-	Low
34	GND	GND	-	-	GND
35	SPOUTP	A.O	-	-	-
36	GNDPA	GND	-	-	GND
37	SPOUTN	A.O	-	-	-
38	VCCPA	VCC	VCC	-	-
39	HSSPOUT	A.O	-	-	-
40	LOUT0	A.O	-	-	-
41	LOUT1	A.O	-	-	-
42	VREF0	A.O	-	-	-
43	DCIN0	A.I	-	-	-
44	LIN0	A.I	-	-	-
45	LGS0	A.O	-	-	-
46	CIDO0	A.O	-	-	-
47	CIDIN0	A.I	-	-	-
48	CIDIP0	A.I	-	-	-
49	VCCA	VCC	VCC	-	-
50	DCIN1	A.I	-	-	-
51	LIN1	A.I	-	-	-
52	LGS1	A.O	-	-	-
53	CIDO1	A.O	-	-	-
54	CIDIN1	A.I	-	-	-
55	CIDIP1	A.I	-	-	-
56	GNDA	GND	-	-	GND
57	HSMIP	A.I	-	-	-
58	HSMIN	A.I	-	-	-
59	VREF	A.O	-	-	-
60	MIN	A.I	-	-	-
61	MIP	A.I	-	-	-
62	DCIN2	A.I	-	-	-
63	GNDPLL	GND	-	-	GND
64	VCCPLL1	VCC	VCC	-	-

Pin	Description	I/O	High	Hi-z	Low
65	NC	-	-	-	Normal
66	XOUT	A.O	-	-	-
67	XIN	A.I	-	-	-
68	GND	GND	-	-	GND
69	GND	GND	-	-	GND
70	RSTN	D.I	Normal	-	Reset
71	PDN	D.I	Power On	-	Power Down
72	FL_CE	D.O	Not	-	Active
73	BELL	D.I	Detect	-	Not
74	NC	D.O	-	-	Normal
75	FLASH_ALE	D.O	Active	-	Not
76	FLASH_CLE	D.O	Active	-	Not
77	FLASH2	D.O	-	-	Normal
78	NC	D.O	-	-	Normal
79	ANT_DVC	D.O	ANT1	-	ANT2
80	RF_RESET	D.O	Not	-	Active
81	PCONT	D.O	High	-	Low
82	S_LOW	D.O	High	-	Low
83	ADPCM_BCLK	D.I	High	-	Low
84	ADPCM_SYNC	D.I	High	-	Low
85	ADPCM_OUT	D.I	High	-	Low
86	ADPCM_IN	D.O	High	-	Low
87	BBIC_PWDN	D.O	Not	-	Active
88	GND	GND	-	-	GND
89	VCC	VCC	VCC	-	-
90	IRQ_TXRX	D.I	Normal	-	Interrupt
91	NC	D.O	-	-	Normal
92	NC	D.O	-	-	Normal
93	NC	D.O	-	-	Normal
94	UART_TX	D.O	High	-	Low
95	UART_RX	D.I	High	-	Low
96	TCK	D.I	High	-	Low
97	TMS	D.I	High	-	Low
98	TDI	D.I	High	-	Low
99	TDO	D.O	High	-	Low
100	ANS_LED	D.O	On	-	Off
101	BACKLIGHT	D.O	On	-	Off
102	SP_LED	D.O	On	-	Off
103	F/E	D.O	EEPROM	-	FLASH
104	NC	D.I	-	-	Normal
105	NC	D.O	-	-	Normal
106	GND	GND	-	-	GND
107	VCC	VCC	Vcc	-	-
108	KEY1	D.I	Key In	-	Non
109	KEY2	D.I	Key In	-	Non
110	KEY3	D.I	Key In	-	Non
111	KEY4	D.I	Key In	-	Non
112	KEY5	D.I	Key In	-	Non
113	KEY6	D.I	Key In	-	Non
114	NC	D.O	-	-	Normal
115	FL_WP	D.O	Not	-	Active
116	IO7	D.O	High	-	Low
117	IO6	D.O	High	-	Low
118	IO5	D.O	High	-	Low
119	IO4	D.O	High	-	Low
120	IO3	D.O	High	-	Low
121	IO2	D.O	High	-	Low
122	IO1	D.O	High	-	Low
123	IO0	D.O	High	-	Low
124	GND	GND	-	-	GND
125	VCC	VCC	Vcc	-	-
126	DRDN	D.O	Not	-	Active
127	DWRN	D.O	Not	-	Active
128	BANK0	D.O	High	-	Low

18. CPU DATA(Cordless Handset)

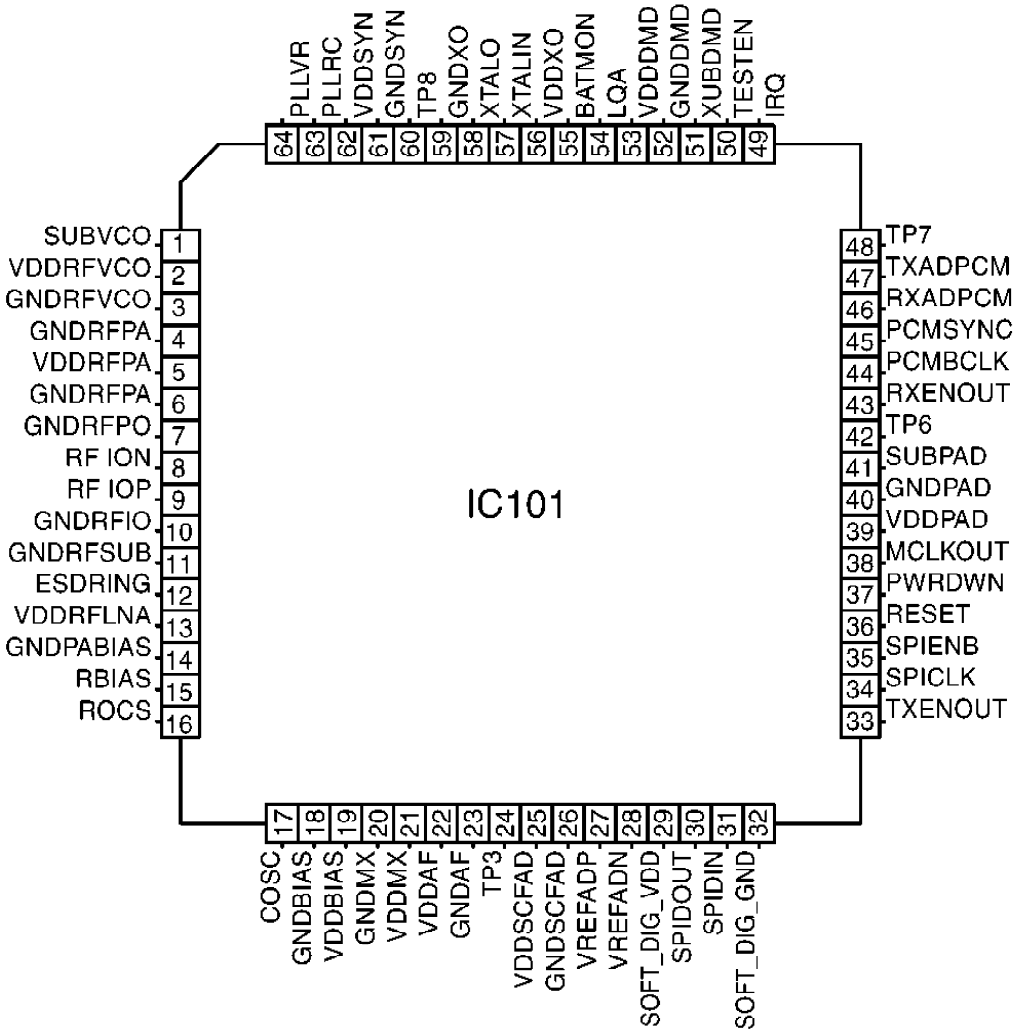
18.1. IC201

Pin	Description	I/O	High	Hi-z	Low
1	EEPROM_CS	D.O	Active	-	Not
2	LCD_POWER	D.O	Off	-	On
3	MIC_SW	D.O	Bias Off	-	Bias On
4	LCD_CSB	D.O	Not	-	Active
5	LCD_RS	D.O	Data	-	Instruct
6	LCD_WR	D.O	Read	-	Write
7	LCD_RD	D.O	Active	-	Not
8	LCD_DR0	D.O	High	-	Low
9	LCD_DR1	D.O	High	-	Low
10	LCD_DR2	D.O	High	-	Low
11	LCD\DR3	D.O	High	-	Low
12	VCC	VCC	Vcc	-	-
13	GND	GND	-	-	GND
14	RF_POWER	D.O	Off	-	On
15	BBIC_PWDN	D.O	Not	-	Activo
16	EGPIO2	D.O	Active	Not	-
17	LCD_RESET	D.O	Not	-	Reset
18	EGPIO4	D.O	Active	Not	-
19	EGPIO5	D.O	Active	Not	-
20	EGPIO6	D.O	Active	Not	-
21	EGPIO7	D.O	Active	Not	-
22	EGPIO8	D.O	Active	Not	-
23	EGPIO9	D.O	Active	Not	-
24	RECHARGE_LED	D.O	-	-	Normal
25	SPI_DOUT	D.I	High	-	Low
26	SPI_EN	D.O	Not	-	Active
27	SPI_CLK	D.O	High	-	Low
28	GND	-	-	-	GND
29	SPI_DIN	D.O	High	-	Low
30	ALARM_VOL	D.O	Off	-	On
31	GNDPA	GND	-	-	GND
32	SPP	A.O	-	-	-
33	SPN	A.O	-	-	-
34	VCCPA	VCC	VCC	-	-
35	HSOUT	A.O	-	-	-
36	BZOUT	A.O	-	-	-
37	VCCA	VCC	VCC	-	-
38	LIN	A.I	-	-	-
39	LGS	A.O	-	-	-
40	DCIN	A.I	-	-	-
41	CIDIN	A.I	-	-	-
42	CIDIP	A.I	-	-	-
43	CIDO	A.O	-	-	-
44	MGS	A.O	-	-	-
45	MIN	A.I	-	-	-
46	GNDA	GND	-	-	GND
47	HMIN	A.I	-	-	-
48	HMGS	A.O	-	-	-
49	VREF	A.O	-	-	-
50	GNDPLL	GND	-	-	GND

Pin	Description	I/O	High	Hi-z	Low
51	VCCPLL	VCC	VCC	-	-
52	VRTC	VCC	VCC	-	-
53	XOUT	A.O	-	-	-
54	XIN	A.I	-	-	-
55	GND	GND	-	-	GND
56	RSTN	D.I	Normal	-	Reset
57	PDN	D.I	Power On	-	Power Down
58	CHGCTL	D.O	Charge	-	Non charge
59	IRQ_TXRX	D.I	Normal	-	Interrupt
60	GPIO2	D.O	-	-	Normal
61	GND	D.O	-	-	Normal
62	VCC	D.O	-	-	Normal
63	GPIO05	D.O	-	-	Normal
64	HEADSET	D.I	Headset In	-	Non
65	LCD_B.L	D.O	On	-	Off
66	TALK_LED	D.O	-	-	Normal
67	Not used	D.O	-	-	Normal
68	LIGHTED_LED	D.O	On	-	Off
69	ADPCM_BCLK	D.I	High	-	Low
70	ADPCM_SYNC	D.I	High	-	Low
71	ADPCM_OUT	D.I	High	-	Low
72	ADPCM_IN	D.O	High	-	Low
73	RF_RESET	D.O	Normal	-	Reset
74	GND	GND	-	-	GND
75	VCC	VCC	VCC	-	-
76	CD15	D.I	Key In	-	Non
77	CD14	D.I	Key In	-	Non
78	CD13	D.I	Key In	-	Non
79	CD12	D.I	Key In	-	Non
80	CD11	D.O	-	-	Normal
81	CHG	D.I	Off Charge	-	On Charge
82	S_LOW	D.O	-	Pin 83 = H: High Power Pin 83 = L: Low Power	Super Low Power
83	PCONT	D.O	Pin 82 = Hiz: High Power Pin 82 = L: Supel Low Power	-	P 82 = Hiz: Low Power P 82 = L: Supel Low Power
84	CD7	D.O	-	-	Normal
85	CD6	D.O	-	-	Normal
86	CD5	D.O	-	-	Normal
87	CD4	D.O	-	-	Normal
88	CD3	D.O	-	-	Normal
89	CD2	D.O	-	-	Normal
90	CD1	D.O	-	-	Normal
91	CD0	D.O	-	-	Normal
92	GND	GND	-	-	GND
93	VCC	VCC	VCC	-	-
94	VCC	VCC	VCC	-	-
95	GND	GND	-	-	GND
96	UART_RX	D.I	High	-	Low
97	UART_TX	D.O	High	-	Low
98	EEPROM_CLK	D.O	High	-	Low
99	EEPROM_DI	D.O	High	-	Low
100	EEPROM_DO	D.I	High	-	Low

19. EXPLANATION OF IC TERMINALS (RF Unit, Base Unit)

19.1. IC101


IC101
1 SUBVCO
2 VDDRFVCO
3 GNDRFVCO
4 GNDRFPA
5 VDDRFPA
6 GNDRFPA
7 GNDRFPO
8 RF ION
9 RF IOP
10 GNDRFIO
11 GNDRFSUB
12 ESDRING
13 VDDRFLNA
14 GNDPABIAS
15 RBIAS
16 ROCS
17 COSC
18 GNDBIAS
19 VDDBIAS
20 GNDMX
21 VDDMX
22 VDDAF
23 GNDAF
24 TP3
25 VDDSCFAD
26 GNDSCFAD
27 VREFADP
28 VREFADN
29 SOFT_DIG_VDD
30 SPIDOUT
31 SPIDIN
32 SOFT_DIG_GND
33 TXENOUT
34 SPICLK
35 SPIENB
36 RESET
37 PWRDWN
38 MCLKOUT
39 VDDPAD
40 GNDPAD
41 SUBPAD
42 TP6
43 RXENOUT
44 PCMBCLK
45 PCMSYNC
46 RXADPCM
47 TXADPCM
48 TP7
49 IRQ
50 TESTEN
51 XUBDMD
52 GNDDMD
53 VDDDMD
54 LQA
55 BATMON
56 VDDXO
57 XTALIN
58 XTALO
59 GNDXO
60 TP8
61 GNDSYN
62 VDDSYN
63 PLLRC
64 PLLVR

Pin	Description	I/O
1	SUBVCO	GND
2	VDDRFVCO	VCC
3	GNDRFVCO	GND
4	GNDRFPA	GND
5	VDDRFPA	VCC
6	GNDRFPA	GND
7	GNDRFPO	GND
8	RF ION	I/O
9	RF IOP	I/O
10	GNDRFIO	GND
11	GNDRFSUB	GND
12	ESDRING	GND
13	VDDRFLNA	VCC
14	GNDPABIAS	GND
15	RBIAS	I
16	ROCS	I
17	COSC	I
18	GNDBIAS	GND
19	VDDBIAS	VCC
20	GNDMX	GND
21	VDDMX	VCC
22	VDDAF	VCC
23	GNDAF	GND
24	TP3	O
25	VDDSCFAD	VCC
26	GNDSCFAD	GND
27	VREFADP	VCC
28	VREFADN	I
29	SOFT_DIG_VDD	VCC
30	SPIDOUT	D.O
31	SPIDIN	D.I
32	SOFT_DIG_GND	GND

Pin	Description	I/O
33	TXENOUT	D.O
34	SPICLK	D.I
35	SPIENB	D.I
36	RESET	D.I
37	PWRDWN	D.I
38	MCLKOUT	O
39	VDDPAD	VCC
40	GNDPAD	GND
41	SUBPAD	GND
42	TP6	D.O
43	RXENOUT	D.O
44	PCMBCLK	D.O
45	PCMSYNC	D.O
46	RXADPCM	D.O
47	TXADPCM	D.I
48	TP7	D.O
49	IRQ	D.O
50	TESTEN	D.I
51	XUBDMD	GND
52	GNDDMD	GND
53	VDDDMD	VCC
54	LQA	D.O
55	BATMON	I
56	VDDXO	VDD
57	XTALIN	I
58	XTALO	O
59	GNDXO	GND
60	TP8	D.I
61	GNDSYN	GND
62	VDDSYN	VCC
63	PLLRC	O
64	PLLVR	I

20. HOW TO REPLACE FLAT PACKAGE IC

20.1. Preparation

- SOLDER

Sparkle Solder 115A-1, 115B-1 or Almit Solder KR-19, KR-19RMA

- Soldering iron

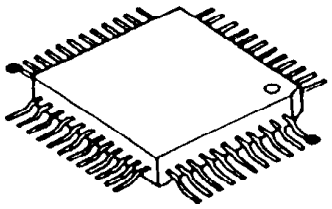
Recommended power consumption will be between 30 W to 40 W.
Temperature of Copper Rod 662 ± 50°F (350 ± 10°C)
(An expert may handle between 60 W to 80 W iron, but beginner might damage foil by overheating.)

- Flux

HI115 Specific gravity 0.863
(Original flux will be replaced daily.)

20.2. Procedure

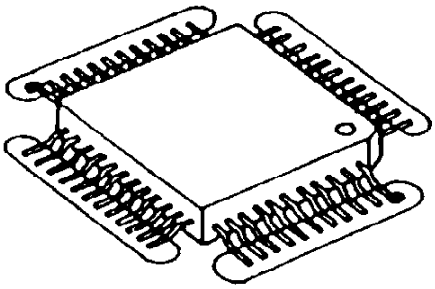
1. Temporary fix FLAT PACKAGE IC by soldering on two marked 2 pins.



● – – – – – –Temporary soldering point.

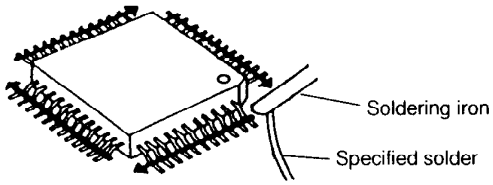
***Most important matter is accurate setting of IC to the corresponding soldering foil.**

2. Apply flux for all pins of FLAT PACKAGE IC.



– – – – – – Flux

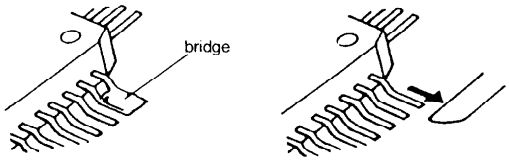
3. Solder employing specified solder to direction of arrow, as sliding the soldering iron.



20.3. Modification Procedure of Bridge

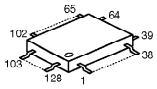
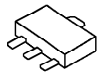
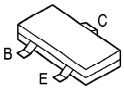
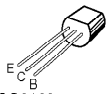
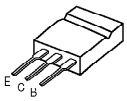
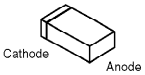
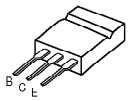
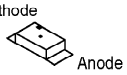
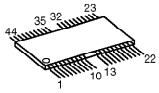
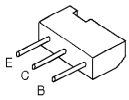
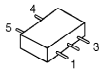
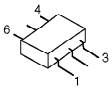
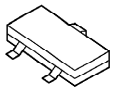
1. Re-solder slightly on bridged portion.

2. Remove remained solder along pins employing soldering iron as shown in below figure.

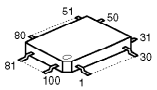
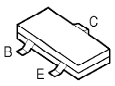
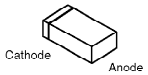
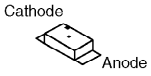


21. TERMINAL GUIDE OF ICs, TRANSISTORS AND DIODES

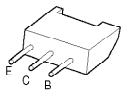
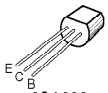
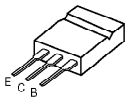
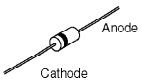
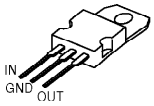
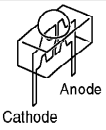
21.1. Base Unit

PQVDRLZ2R0 PQVDRLZ20A	 C2HBBJ000017	 C0CBABD00013	 PQVTDTC143E UN5219 2SD1819A	PQVITC7W74U	 2SC2120 PQVT2N6517CA 2SA1625
 2SD2136	PQVDS1ZB60F1	 PQVDHRU0203A, PQVD1SR154 MA8039, MA8043L, MA8082H, MA111 MA8051, MA8075		 2SD2137	 PQVDSML310MT PQVDBR1111C
 PQWITG2584SH	 2SD1994A	PQVIPS3432UT	 PQVITC7S08FU	 PQVISPM3204T	 C0EBE0000142

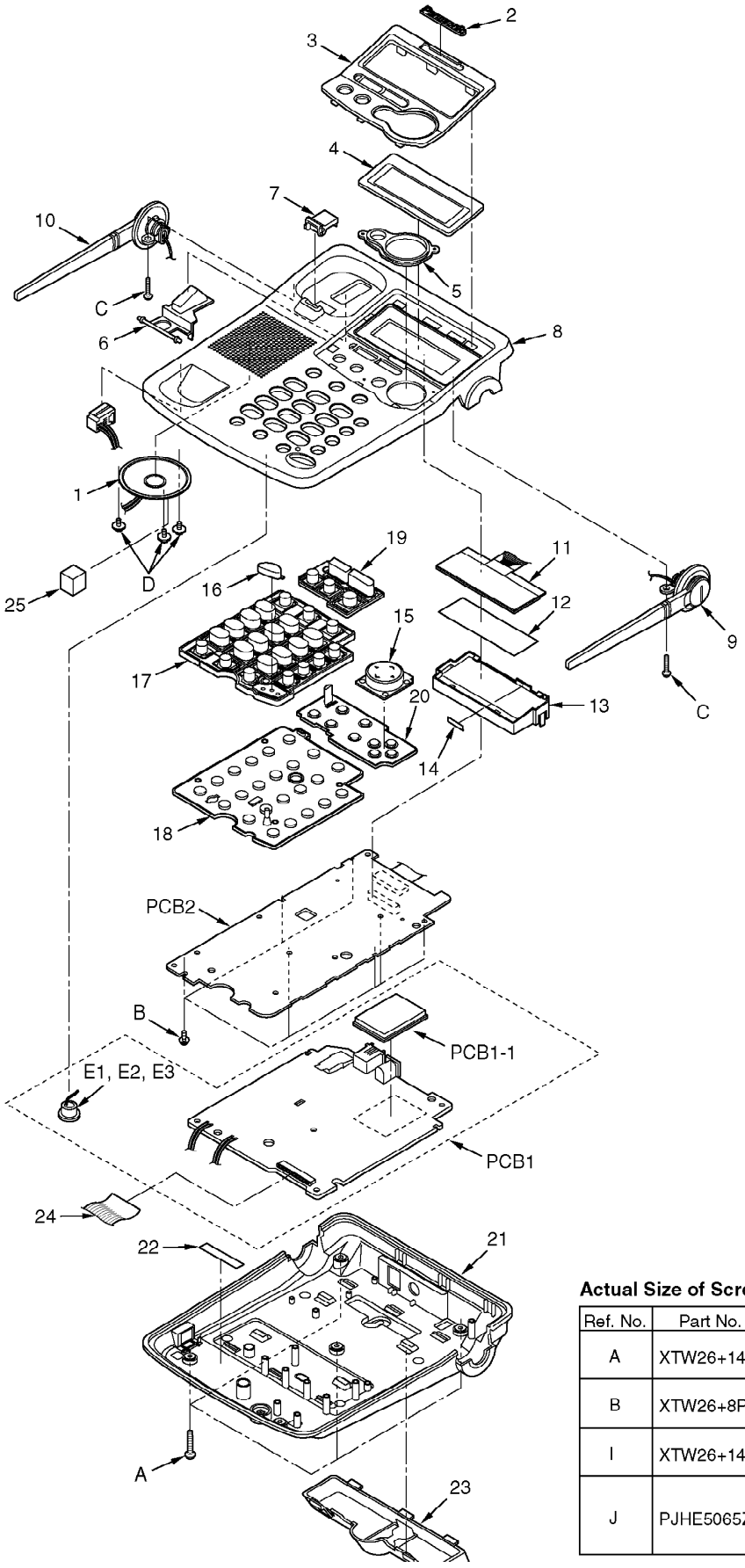
21.2. Cordless Handset

 C2HBBH000049	 2SB1197KQ, UN5213, PQVTDTC143E PQVTD123T146, PQVTDTC143E PQVDTA143TU, 2SD1819A, UN521	 PQVD1SR154 MA8024TW, MA8150 MA111 B0JCDD000001 PQVTDTC144TU	 LNJ308G8JRA	PQWITG2584SR
2SA1797Q	PQVIXCP03302M	PQVIC62FP33M	PQVIC61CN32N	

21.3. Charger

					
2SD1991A	2SA933 DTC143EA	2SD2136	PQVDS5688G	C0CAAHG00013	LNJ201LPQJA

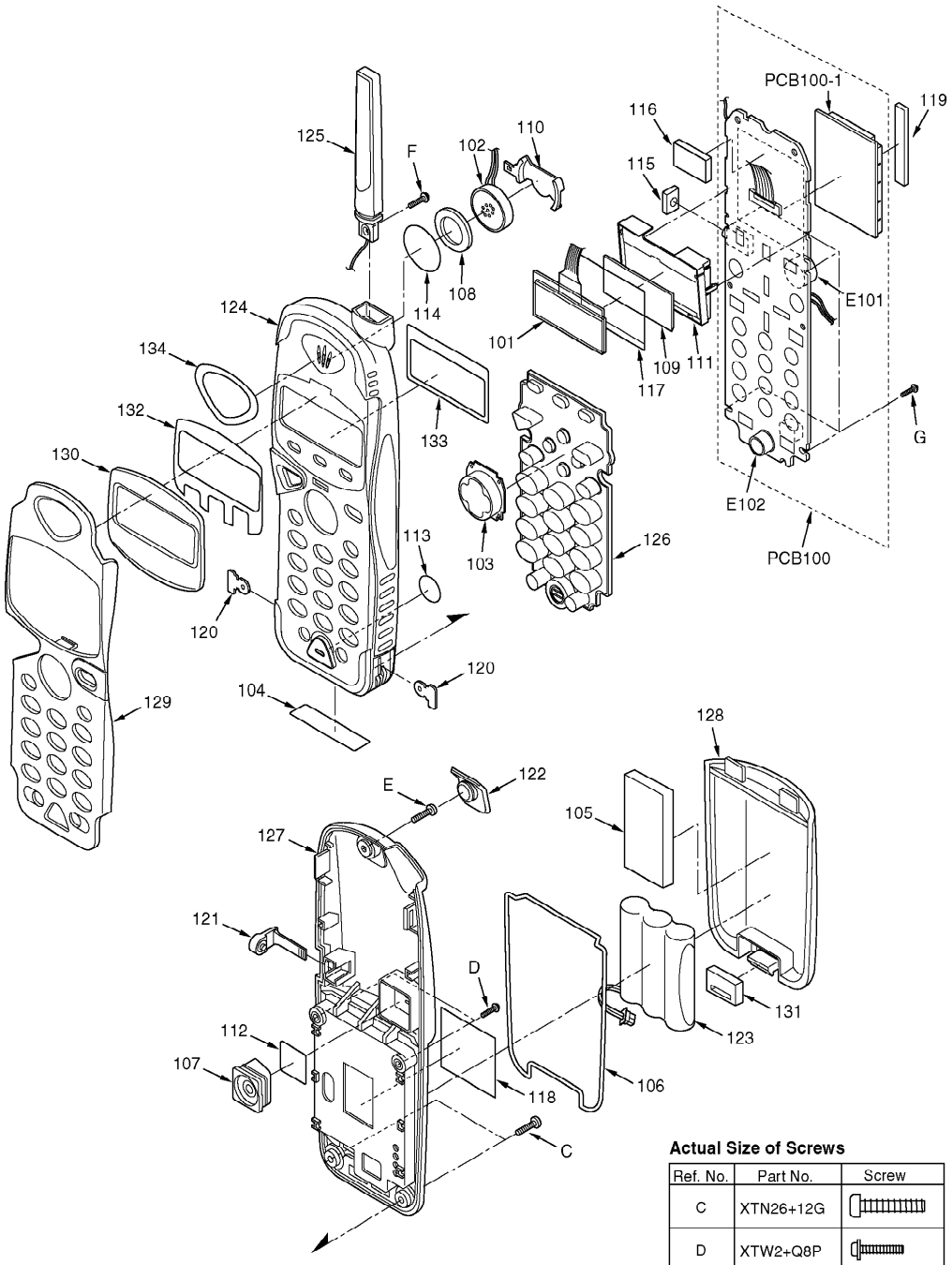
22. CABINET AND ELECTRICAL PARTS (Base Unit)



Actual Size of Screws

Ref. No.	Part No.	Screw
A	XTW26+14P	
B	XTW26+8P	
I	XTW26+14P	
J	PJHE5065Z	

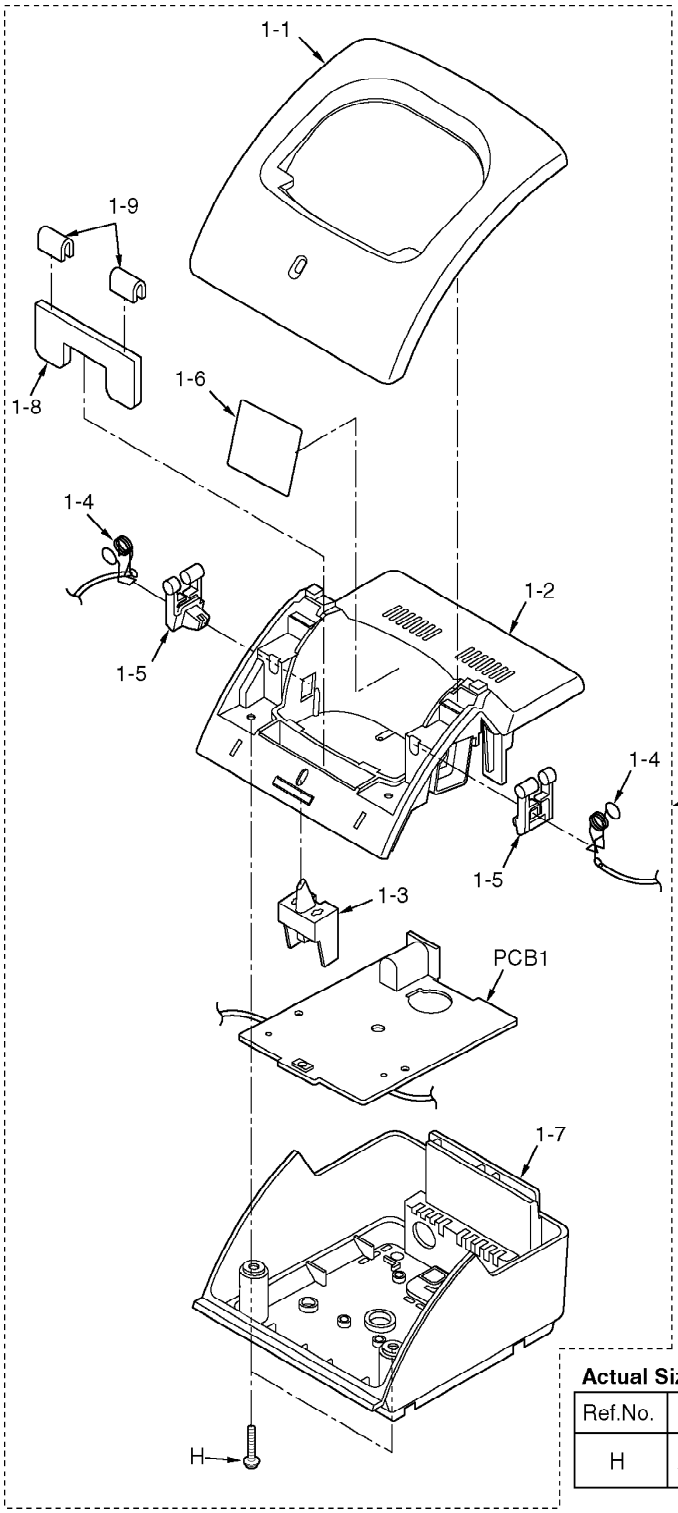
23. CABINET AND ELECTRICAL PARTS (Handset)



Actual Size of Screws

Ref. No.	Part No.	Screw
C	XTN26+12G	
D	XTW2+Q8P	
E	XTN26+12G	
F	XTW26+12P	
G	XTW2+Q8P	

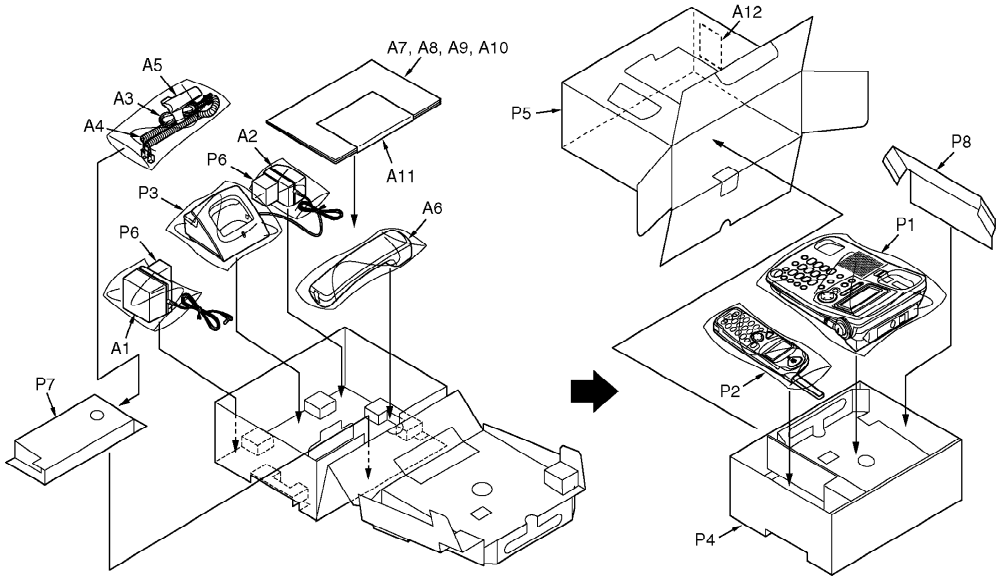
24. CABINET AND ELECTRICAL PARTS (Charger)



Actual Size of Screw

Ref.No.	Part No.	Figure
H	XTW26+14P	

25. ACCESSORIES AND PACKING MATERIALS



26. REPLACEMENT PARTS LIST

Note:

1. **RTL (Retention Time Limited)**
   The marking (RTL) indicates that the Retention Time is limited for this item.
   After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability depends on the type of assembly and the laws governing parts and product retention.
   At the end of this period, the assembly will no longer be available.
2. **Important safety notice**
   Components identified by the ⚠ ; mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.
3. **The S mark means the part is one of some identical parts. For that reason, it may be different from the installed part.**
4. **ISO Code (example: ABS-94HB) of the remarks column shows quality of the material and a flame resisting grade about plastics.**
5. **RESISTORS & CAPACITORS**
   Unless otherwise specified;
   All resistors are in ohms (Ω) K=1000 Ω , M=1000k Ω
   All capacitors are in MICRO FARADS (μ F) P= μ μ F
   ***Type & Wattage of Resistor**

Type

ERC:Solid ERD:Carbon PQRD:Carbon	ERX:Metal Film ERG:Metal Oxide ER0:Metal Film	PQ4R:Carbon ERS:Fusible Resistor ERF:Cement Resistor

Wattege

10,16:1/8W	14,25:1/4W	12:1/2W	1:1W	2:2W	3:3W

*Type & Voltage of Capacitor

Type

ECFD:Semi-Conductor ECQS:Styrol PQCUV:Chip ECQMS:Mica	ECCD,ECKD,ECBT,PQCBC:Ceramic ECQE,ECQV,ECQG:Polyester ECEA,ECSZ:Electlytic ECQP:Polypropylene

Voltage

ECQ Type	ECQG ECQV Type	ECSZ Type	Others	
1H:50V 2A:100V 2E:250V 2H:500V	05:50V 1:100V 2:200V	0F:3.15V 1A:10V 1V:35V 0J:6.3V	0J :6.3V 1A :10V 1C :16V 1E,25:25V	1V :35V 50,1H:50V 1J :63V 2A :100V

26.1. Base Unit

26.1.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQAS57P02Y	SPEAKER	
2	PQGB7X	BADGE, Panasonic	PS-HB
3	PQGG10147Z1	GRILLE	ABS-HB
4	PQGP10216Z1	PANEL, LCD	PC-HB
5	PQGP10214Z1	PANEL, NAVI BUTTON	AS-HB
6	PQBH10038Z1	BUTTON, HOOK	PS-HB
7	PQKE10070Z6	HANGER, HANDSET	ABS-HB
8	PQKM10566Z1	CABINET BODY	PS-HB
9	PQSA10110R	ANTENNA	
10	PQSA10109R	ANTENNA	
11	L5DCBHD00001	LIQUID CRYSTAL DISPLAY	
12	PQHX11033Z	COVER, REFLECTOR SHEET	
13	PQHR10881Z	GUIDE, LCD	ABS-HB
14	PQHG10642Z	SPACER, LCD UNIT	
15	PQBC10367Z1	BUTTON, NAVI KEY	ABS-HB
16	PQBC10368Z1	BUTTON, SP-PHONE KEY	ABS-HB
17	PQBX10349Y2	BUTTON, 23 KEY	ABS-HB
18	PQSX10190Y	KEYBOARD SWITCH, 22KEY	
19	PQBX10363Z1	BUTTON, FUNCTION	ABS-HB
20	PQSX10217Z	KEYBOARD SWITCH	
21	PQYF10552Z1	CABINET COVER	PS-HB
22	PQXDZLDRS1	LABEL, SECURITY TAG	
23	PQYL10008Z1	STAND, WALL MOUNT	ABS-HB
24	PQJE10123Z	LEAD WIRE, FFC	
25	PQHG10661Z	SPACER	

26.1.2. Main P.C. Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PQWP1G2584SH	MAIN P.C.BOARD ASS'Y (RTL)	
PCB1-1	PQLP10243Z	RF UNIT	
		(ICS)	
IC301	C0CBABD00013	IC	
IC331	PQVIPS3432UT	IC	S
IC332	C0EBE0000142	IC	
IC501	C2HBBJ000017	IC	
IC571	PQWITG2584SH	IC	
IC741	PQVITC7S08FU	IC	S
IC751	PQVITC7W74U	IC	S
IC761	PQVISPM3204T	IC	S
		(TRANSISTORS)	
Q101	2SD1819A	TRANSISTOR(SI)	
Q115	2SD1819A	TRANSISTOR(SI)	
Q121	2SA1625	TRANSISTOR(SI)	S
Q122	PQVT2N6517CA	TRANSISTOR(SI)	S
Q131	2SC2120	TRANSISTOR(SI)	S
Q311	2SD2137	TRANSISTOR(SI)	
Q315	2SD1994A	TRANSISTOR(SI)	
Q321	2SD1994A	TRANSISTOR(SI)	
Q341	2SD1819A	TRANSISTOR(SI)	
Q461	2SD1819A	TRANSISTOR(SI)	
Q601	2SD1994A	TRANSISTOR(SI)	
Q611	2SD2136	TRANSISTOR(SI)	
Q621	2SD2137	TRANSISTOR(SI)	
		(DIODES)	
D101	PQVDS1ZB60F1	DIODE(SI)	S
D103	MA111	DIODE(SI)	
D117	MA111	DIODE(SI)	
D118	MA111	DIODE(SI)	
D121	PQVDRLZ20A	DIODE(SI)	S
D131	PQVDRLZ2R0	DIODE(SI)	S
D302	PQVDHRU0203A	DIODE(SI)	S
D310	PQVD1SR154	DIODE(SI)	S
D311	MA8082H	DIODE(SI)	
D315	MA8039	DIODE(SI)	
D350	MA8051	DIODE(SI)	
D351	MA8051	DIODE(SI)	
D353	MA8051	DIODE(SI)	
D354	MA8051	DIODE(SI)	
D509	PQVDHRU0203A	DIODE(SI)	S
D521	PQVDHRU0203A	DIODE(SI)	S
D611	MA8043L	DIODE(SI)	
D621	MA8075	DIODE(SI)	
D741	MA111	DIODE(SI)	
D751	MA111	DIODE(SI)	
		(COILS)	
L101	PQLQXF330K	COIL	S
L102	PQLQXF330K	COIL	S
L350	PSLQR2T100K	COIL	
L351	PSLQR2T100K	COIL	
L352	PSLQR2T100K	COIL	
L353	PSLQR2T100K	COIL	
L481	PSLQR2T100K	COIL	

Ref. No.	Part No.	Part Name & Description	Remarks
L482	PSLQR2T100K	COIL	
L490	PSLQR2T100K	COIL	
L501	PFVF2P221SG	COIL	
		(CONNECTORS AND JACKS)	
CN101	PQJJ1TA15Z	TEL JACK	S
CN102	PQJJ1T022Z	JACK	S
CN581	PQJS24A80Z	CONNECTOR, 24P	
CN582	PQJJ1T030Y	JACK, HANDSET	
		(VARISTORS)	
SA101	PQVDDSS301L	VARISTOR (SURGE ABSORBER)	S
SA102	PQVDDSS301L	VARISTOR (SURGE ABSORBER)	S
		(RESISTORS)	
R103	ERJ3GEYJ104	100k	
R104	ERJ3GEYJ104	100k	
R106	ERJ3GEYJ472	4.7k	
R107	ERJ3GEYJ473	47k	
R111	ERJ3GEYJ394	390k	
R112	ERJ3GEYJ394	390k	
R113	ERJ3GEYJ472	4.7k	
R115	ERJ3GEYJ155	1.5M	
R116	ERDS1VJ106	10M	
R117	ERJ3GEYJ275	2.7M	
R118	ERJ3GEYJ102	1k	
R121	ERJ3GEYJ104	100k	
R122	ERJ3GEYJ103	10k	
R124	ERJ3GEYJ473	47k	
R128	ERJ3GEYJ103	10k	
R132	ERJ3GEYJ393	39k	
R133	ERJ3GEYJ102	1k	
R134	ERJ3GEY0R00	0	
R136	ERDS1TJ330	33	S
R138	ERJ3GEYJ470	47	
R139	ERJ3GEYJ122	1.2k	
R140	ERJ3GEYJ821	820	
R221	ERJ3GEYJ104	100k	
R311	ERD25TJ471	470	S
R315	ERJ3GEYJ471	470	
R331	ERJ3GEYJ472	4.7k	
R332	ERJ3GEYJ683	68k	
R333	ERJ3GEYJ103	10k	
R341	ERJ3GEYJ473	47k	
R342	ERJ3GEYJ224	220k	
R343	ERJ3GEYJ102	1k	
R345	ERJ3GEY0R00	0	
R346	ERJ3GEYJ102	1k	
R347	ERJ3GEYJ102	1k	
R351	ERJ3GEYJ272	2.7k	
R352	ERJ3GEYJ102	1k	
R353	ERJ3GEYJ272	2.7k	
R354	ERJ3GEYJ222	2.2k	
R355	ERJ3GEYJ222	2.2k	
R356	ERJ3GEYJ180	18	
R357	ERJ3GEYJ180	18	
R411	ERJ3GEYJ394	390k	

Ref. No.	Part No.	Part Name & Description	Remarks
R412	ERJ3GEYJ394	390k	
R413	ERJ3GEYJ103	10k	
R414	ERJ3GEYJ123	12k	
R415	ERJ3GEYJ473	47k	
R431	ERJ3GEYJ222	2.2k	
R433	ERJ3GEYJ393	39k	
R442	ERJ3GEY0R00	0	
R448	ERJ3GEYJ222	2.2k	
R449	ERJ3GEYJ102	1k	
R461	ERJ3GEYJ150	15	
R462	ERJ3GEYJ392	3.9k	
R464	ERJ3GEYJ474	470k	
R465	ERJ3GEYJ101	100	
R472	ERJ3GEYJ222	2.2k	
R473	ERJ3GEYJ101	100	
R475	ERJ3GEYJ222	2.2k	
R476	ERJ3GEYJ222	2.2k	
R477	ERJ3GEYJ222	2.2k	
R478	ERJ3GEYJ682	6.8k	
R479	ERJ3GEYJ682	6.8k	
R541	ERJ3GEYJ331	330	
R542	ERJ3GEYJ331	330	
R543	ERJ3GEYJ331	330	
R570	ERJ3GEYJ221	220	
R571	ERJ3GEYJ103	10k	
R572	ERJ3GEYJ104	100k	
R573	ERJ3GEYJ221	220	
R574	ERJ3GEYJ221	220	
R575	ERJ3GEYJ221	220	
R576	ERJ3GEYJ221	220	
R577	ERJ3GEYJ104	100k	
R578	ERJ3GEYJ221	220	
R579	ERJ3GEYJ104	100k	
R580	ERJ3GEYJ472	4.7k	
R581	ERJ3GEYJ472	4.7k	
R582	ERJ3GEYJ472	4.7k	
R583	ERJ3GEYJ472	4.7k	
R584	ERJ3GEYJ472	4.7k	
R585	ERJ3GEYJ472	4.7k	
R586	ERJ3GEYJ101	100	
R587	ERJ3GEYJ101	100	
R588	ERJ3GEYJ101	100	
R589	ERJ3GEYJ101	100	
R590	ERJ3GEYJ101	100	
R593	ERJ3GEYJ472	4.7k	
R594	ERJ3GEYJ104	100k	
R595	ERJ3GEYJ472	4.7k	
R611	ERJ3GEYJ471	470	
R621	ERJ3GEYJ561	560	
R659	ERJ3GEYJ221	220	
R660	ERJ3GEYJ821	820	
R672	ERJ3GEYJ101	100	
R673	ERJ3GEYJ101	100	
R674	ERJ3GEYJ101	100	

Ref. No.	Part No.	Part Name & Description	Remarks
R675	ERJ3GEYJ101	100	
R676	ERJ3GEYJ472	4.7k	
R679	ERJ3GEYJ472	4.7k	
R681	ERJ3GEYJ472	4.7k	
R682	ERJ3GEYJ472	4.7k	
R685	ERJ3GEYJ472	4.7k	
R687	ERJ3GEYJ472	4.7k	
R689	ERJ3GEYJ472	4.7k	
R751	ERJ3GEYJ103	10k	
R753	ERJ3GEYJ104	100k	
R754	ERJ3GEYJ104	100k	
		(CAPACITORS)	
C101	ECKD2H681KB	680P	S
C102	ECKD2H681KB	680P	S
C103	PQCUV1H154KR	0.15	
C104	PQCUV1H154KR	0.15	
C106	PQCUV1A684KB	0.68	
C111	ECKD2H681KB	680P	S
C112	ECKD2H681KB	680P	S
C113	ECUV1H102KBV	0.001	
C115	ECUV1H103KBV	0.01	
C121	ECUV1H103KBV	0.01	
C124	ECUV1H102KBV	0.001	
C127	ECUV1H102KBV	0.001	
C131	ECUV1H101JCV	100P	
C132	ECUV1H103KBV	0.01	
C134	ECEA1HKS100	10	S
C139	ECEA1CKA100	10	
C140	ECUV1C473KBV	0.047	
C233	ECUV1H102KBV	0.001	
C301	ECUV1H103KBV	0.01	
C302	ECUV1C104ZFV	0.1	
C303	ECUV1C104ZFV	0.1	
C304	ECEA1CKA100	10	
C306	ECEA1AU221	220	
C308	ECUV1H103KBV	0.01	
C311	ECEA1CKA100	10	
C315	ECEA1CKA100	10	
C316	ECUV1A105ZFV	1	
C343	ECUV1C104ZFV	0.1	
C344	ECUV1C104ZFV	0.1	
C345	PQCUV1C334KB	0.33	
C350	ECUV1H223KBV	0.022	S
C351	ECUV1H223KBV	0.022	S
C352	ECUV1H102KBV	0.001	
C354	ECUV1A105ZFV	1	
C355	ECST0JY475	4.7	
C356	ECUV1H100DCV	10P	S
C357	ECUV1H070CCV	7P	
C358	ECUV1H070CCV	7P	
C359	ECST0JY225	2.2	
C360	ECUV1C104ZFV	0.1	
C361	ECUV1H103KBV	0.01	
C362	ECUV1H103KBV	0.01	

Ref. No.	Part No.	Part Name & Description	Remarks
C363	ECUV1H070CCV	7P	
C364	ECUV1H070CCV	7P	
C411	ECUV1H121JCV	120P	
C412	ECUV1A105ZFV	1	
C413	ECUV1H121JCV	120P	
C414	ECST0JY106	10M	
C415	ECUV1A105ZFV	1	
C431	ECUV1H272KBV	0.0027	
C432	ECUV1C104KBV	0.1	
C440	ECUV1H100DCV	10P	S
C441	ECUV1A224KBV	0.22	
C442	ECUV1C473KBV	0.047	
C448	ECUV1C473KBV	0.047	
C449	ECUV1C104KBV	0.1	
C451	ECUV1H223KBV	0.022	S
C461	ECUV1C104ZFV	0.1	
C464	ECUV1H101JCV	100P	
C467	ECUV1H070CCV	7P	
C470	ECUV1C823KBV	0.082	
C472	ECEA0JKS220	22	S
C474	ECUV1C104KBV	0.1	
C475	ECUV1C104KBV	0.1	
C476	ECUV1H103KBV	0.01	
C477	ECUV1H103KBV	0.01	
C481	ECUV1H070CCV	7P	
C482	ECUV1H070CCV	7P	
C483	ECUV1H070CCV	7P	
C501	ECEA0JU102	1000	
C502	ECUV1C104ZFV	0.1	
C503	ECUV1C104ZFV	0.1	
C504	ECUV1C104ZFV	0.1	
C505	ECUV1C104ZFV	0.1	
C506	ECUV1H060DCV	6P	S
C507	ECUV1H060DCV	6P	S
C509	ECUV1C104ZFV	0.1	
C510	ECUV1C104ZFV	0.1	
C511	ECST0JY106	10M	
C515	ECST0JY106	10M	
C516	ECUV1C104ZFV	0.1	
C521	ECEA0JKA221	220	
C522	ECUV1C104ZFV	0.1	
C524	ECEA0JKA331	330	
C525	ECUV1C104ZFV	0.1	
C526	ECUV1H332KBV	0.0033	
C560	ECUV1H101JCV	100P	
C561	ECUV1H101JCV	100P	
C562	ECUV1H101JCV	100P	
C563	ECUV1H101JCV	100P	
C564	ECUV1H101JCV	100P	
C565	ECUV1H101JCV	100P	
C566	ECUV1H101JCV	100P	
C567	ECUV1H101JCV	100P	
C570	ECUV1C104ZFV	0.1	
C571	ECUV1C104ZFV	0.1	

Ref. No.	Part No.	Part Name & Description	Remarks
C572	ECUV1H681JCV	680P	S
C573	ECUV1H101JCV	100P	
C574	ECUV1H101JCV	100P	
C580	ECEA1CKA100	10	
C581	ECUV1C104ZFV	0.1	
C582	ECUV1H101JCV	100P	
C583	ECUV1H103KBV	0.01	
C584	ECUV1H103KBV	0.01	
C586	ECUV1H103KBV	0.01	
C591	ECUV1H102KBV	0.001	
C592	ECUV1H102KBV	0.001	
C601	ECA0JHG101	100P	
C603	ECUV1C104ZFV	0.1	
C611	ECA0JHG101	100P	
C613	ECA0JHG101	100P	
C614	ECUV1C104ZFV	0.1	
C621	ECEA1EU101	100	S
C631	ECUV1H103KBV	0.01	
C654	ECUV1C104ZFV	0.1	
C657	ECUV1H680JCV	68P	
C663	ECUV1H680JCV	68P	
C665	ECUV1H680JCV	68P	
C741	ECUV1C104ZFV	0.1	
C751	ECUV1H100DCV	10P	S
C752	ECUV1H100DCV	10P	S
C753	ECUV1C104ZFV	0.1	
C761	ECUV1H070CCV	7P	
C763	ECUV1H070CCV	7P	
		(OTHERS)	
E1	WM-53BSZ	MICROPHONE	
E2	PQMG10022Z	SPACER, MIC RUBBER	
E3	PQJE10093X	LEAD WIRE	
HS1	ESE14A211	PUSH SWITCH, HANDSET HOOK	
G601	PQJT10152Z	TERMINAL, CHARGE	
G603	PQJT10152Z	TERMINAL, CHARGE	
G604	PQJT10152Z	TERMINAL, CHARGE	
G606	PQJT10152Z	TERMINAL, CHARGE	
P101	PQRPAR390N	POSISTOR	S
X501	PQVCK4096N9Z	CRYSTAL OSCILLATOR	S
RA583	EXRV8V000	RESISTOR ARRAY	

26.1.3. Operational P.C.Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB2	PQWP2G2584SH	OPERATIONAL P.C.BOARD ASS'Y (RTL)	
		(TRANSISTORS)	
Q401	UN5219	TRANSISTOR(SI)	
Q402	PQVTDTC143E	TRANSISTOR(SI)	S
Q403	UN5219	TRANSISTOR(SI)	
		(DIODES)	
LED401	PQVDSML310MT	LED	S
LED402	PQVDSML310MT	LED	S
LED403	PQVDSML310MT	LED	S
LED404	PQVDSML310MT	LED	S
LED405	PQVDSML310MT	LED	S
LED406	PQVDBR1111C	LED	S
LED407	PQVDBR1111C	LED	S
		(CONNECTORS)	
CN6	PQJS24B33Z	CONNECTOR, 24P	
CN7	PQJS18B27Z	CONNECTOR, 18P	
		(CAPACITORS)	
C401	ECUV1C104KBV	0.1	
C402	ECUV1C104KBV	0.1	
C403	ECUV1C104KBV	0.1	
C404	ECUV1C104KBV	0.1	
C405	ECUV1C104KBV	0.1	
C406	ECUV1A474ZFV	0.47	S
C407	ECUV1A474ZFV	0.47	S
C408	ECUV1A474ZFV	0.47	S
		(RESISTORS)	
R401	ERJ3GEYJ820	82	
R402	ERJ3GEYJ820	82	
R403	ERJ3GEYJ820	82	
R404	ERJ3GEYJ820	82	
R405	ERJ3GEYJ820	82	
R406	ERJ3GEYJ221	220	
R407	ERJ3GEYJ151	150	
R410	ERJ3GEYF394	390k	
R411	ERJ3GEYF824	820k	

26.2. Cordless Handset

26.2.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
101	PQADGP0831GN	LIQUID CRYSTAL DISPLAY	
102	L0AD02A00011	SPEAKER	
103	PQBC10335Z3	BUTTON, NAVIGATION	AS-HB
104	PQGT15335Z	NAME PLATE	
105	PQHE10119Z	SPACER	
106	PQHG10620Z	SPACER, BATTERY	
107	PQHG10621Z	SPACER , RINGER	
108	PQHG10630Z	RUBBER PARTS, SPEAKER	
109	PQHR10727Z	SPACER, LCD PLATE	PMMA-HB
110	PQHR10739Z	GUIDE, SPEAKER	ABS-HB
111	PQHR10850Z	GUIDE, LCD	ABS-HB
112	PQHS10384Z	COVER, RINGER	
113	PQHS10386Z	COVER, MIC	
114	PQHS10461Z	COVER, SP	
115	PQHS10484Z	COVER, E/P JACK	
116	PQHS10485Z	SPACER, SPEAKER	
117	PQHX10862Z	COVER, LCD	
118	PQHX10934Z	COVER, BBIC	
119	PQHX10959Z	COVER, RF	
120	PQJT10175Z	TERMINAL, CHARGE	
121	PQKE10128Z3	COVER, E/P CAP	
122	PQKE10129Z3	COVER	
123	PQP510SVC	BATTERY, NI-CD	
124	PQKM10482Z3	CABINET BODY	ABS-HB
125	PQSA10120S	ANTENNA	
126	PQSX10171T	KEYBOARD SWITCH, DIAL	
127	PQKF10514Z5	CABINET COVER	ABS-HB
128	PQKK10117Z5	RID, BATTERY	ABS-HB
129	PQGG10127M5	GRILLE	ABS-HB
130	PQGP10181W1	PANEL, LCD	AS-HB
131	PQHG10629Z	SPACER , BATTERY	
132	PQHS10460Z	TAPE, LCD	
133	PQHS10464Z	SPACER, LCD	
134	PQHS10478Y	TAPE, GRILLE	

26.2.2. Main P.C. Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB100	PQWPTG2584SR	MAIN P.C.BOARD ASS'Y (RTL)	
PCB100-1	PQLP10244Z	RF UNIT	
		(ICS)	
IC201	C2HBBH000049	IC	
IC202	PQWITG2584SR	IC	
IC203	PQVIC62FP33M	IC	S
IC204	PQVIXCP3302M	IC	S
IC205	PQVIC61CN32N	IC	S
		(TRANSISTORS)	
Q201	PQVTDTC143E	TRANSISTOR(SI)	S
Q202	PQVTDTC143E	TRANSISTOR(SI)	S
Q203	PQVTDTA143TU	TRANSISTOR(SI)	
Q204	2SA1797Q	TRANSISTOR(SI)	S
Q205	2SD1819A	TRANSISTOR(SI)	
Q206	PQVTDTC143E	TRANSISTOR(SI)	S
Q207	PQVTDTC144TU	TRANSISTOR(SI)	S
Q208	PQVTD123T146	TRANSISTOR(SI)	S
Q209	PQVTD123T146	TRANSISTOR(SI)	S
Q210	UN521	TRANSISTOR(SI)	
Q211	PQVTDTA143TU	TRANSISTOR(SI)	
Q212	2SB1197KQ	TRANSISTOR(SI)	S
Q213	UN5213	TRANSISTOR(SI)	
Q214	PQVTDTC143E	TRANSISTOR(SI)	S
		(DIODES)	
D203	MA111	DIODE(SI)	
D211	MA8024TW	DIODE(SI)	S
D212	MA8150	DIODE(SI)	
D213	MA8150	DIODE(SI)	
D214	PQVD1SR154	DIODE(SI)	S
D216	PQVD1SR154	DIODE(SI)	S
R248	B0JCDD000001	DIODE(SI)	
LED201	LNJ308G8JRA	LED	
LED202	LNJ308G8JRA	LED	
LED203	LNJ308G8JRA	LED	
LED204	LNJ308G8JRA	LED	
LED205	LNJ308G8JRA	LED	
LED206	LNJ308G8JRA	LED	
LED207	LNJ308G8JRA	LED	
		(COILS)	
L204	J0JCC0000186	COIL	
L205	J0JCC0000186	COIL	
		(CONNECTORS AND JACKS)	
CN201	PQJS22B11Z	CONNECTOR, 22P	
CN202	PQJP2D13Z	CONNECTOR, 2P	S
CN203	PQJJ1J007Z	EAR JACK	S
		(RESISTORS)	
R201	ERJ3GEYJ331	330	
R202	ERJ3GEYJ331	330	
R203	ERJ3GEYJ331	330	
R204	ERJ3GEYJ331	330	
R205	ERJ3GEYJ101	100	
R206	ERJ3GEYJ101	100	
R207	ERJ3GEYJ101	100	
R209	ERJ3GEYJ102	1k	

Ref. No.	Part No.	Part Name & Description	Remarks
R210	ERJ3GEYJ104	100k	
R211	ERJ3GEYJ104	100k	
R212	ERJ3GEYJ101	100	
R213	ERJ3GEYJ101	100	
R217	ERJ3EKF4533	453k	
R218	ERJ3GEYF824	820k	S
R220	ERJ3GEYJ474	470k	
R221	ERJ3GEYJ103	10k	
R222	ERJ3GEYJ101	100	
R223	ERJ3GEY0R00	0	
R224	ERJ3GEYJ103	10k	
R225	ERJ3GEYJ472	4.7k	
R226	ERJ3GEYJ103	10k	
R227	ERJ3GEYJ473	47k	
R228	ERJ3GEYJ224	220k	
R229	ERJ3GEYJ102	1k	
R230	ERJ3GEYJ102	1k	
R231	ERJ3GEYJ102	1k	
R232	ERJ3GEYJ103	10k	
R233	ERJ3GEY0R00	0	
R234	ERJ3EKF2204	2.2M	
R235	ERJ3EKF2204	2.2M	
R236	ERJ3GEYJ473	47k	
R240	ERJ3GEY0R00	0	
R241	ERJ3GEY0R00	0	
R242	ERJ3GEYJ180	18	
R243	ERJ3GEYJ180	18	
R244	ERJ3GEYJ393	39k	
R245	ERJ3GEYJ473	47k	
R246	ERJ3GEYJ475	4.7M	
R247	ERJ3GEYJ391	390	
R249	ERJ3GEYJ222	2.2k	
R250	ERJ3GEYJ222	2.2k	
R251	ERJ3GEYJ120	12	
R252	ERJ3GEYJ820	82	
R253	ERJ3GEYJ222	2.2k	
R260	ERJ3GEYJ103	10k	
R263	ERJ3GEYJ104	100k	
R264	ERJ3GEYJ103	10k	
R265	ERJ3GEYJ222	2.2k	
R266	ERJ3GEYJ105	1M	
R270	ERJ3GEYJ104	100k	
R271	ERJ3GEY0R00	0	
R272	ERJ3GEYJ105	1M	
R273	ERJ3GEY0R00	0	
R278	ERJ3GEY0R00	0	
R283	ERJ3GEYJ473	47k	
R284	PQ4R18XJ122	1.2k	S
R285	ERJ3GEYJ102	1k	
L207	PQ4R10XJ000	0	S
L208	PQ4R10XJ000	0	S
		(CAPACITORS)	
C203	ECUV1C104ZFV	0.1	
C205	ECUV1H101JCV	100P	

Ref. No.	Part No.	Part Name & Description	Remarks
C206	ECUV1C104KBV	0.1	
C207	ECUV1C104KBV	0.1	
C208	ECUV1C104KBV	0.1	
C209	ECUV1C104KBV	0.1	
C210	ECUV1C104KBV	0.1	
C211	ECUV1A474KBV	0.47	
C212	ECUV1A474KBV	0.47	
C213	ECEV1AA221	220	
C214	ECUV1H103KBV	0.01	
C215	ECUV1A474KBV	0.47	
C217	ECUV1C104ZFV	0.1	
C218	ECUV1C104ZFV	0.1	
C219	ECUV1H470JCV	47P	
C220	ECEV0JA101	100	
C221	ECUV1C104ZFV	0.1	
C222	ECUV1C104ZFV	0.1	
C223	ECST0JY106	10	
C224	ECUV1C104ZFV	0.1	
C226	ECUV1C104ZFV	0.1	
C227	ECUV1H470JCV	47P	
C228	ECUV1C104ZFV	0.1	
C229	ECUV1C104ZFV	0.1	
C230	ECUV1C104KBV	0.1	
C231	ECUV1A224KBV	0.22	
C232	ECUV1C104KBV	0.1	
C233	ECUV1C104ZFV	0.1	
C234	ECUV1A224KBV	0.22	
C236	ECUV1H060DCV	6P	S
C237	ECUV1H060DCV	6P	S
C239	ECUV1H103KBV	0.01	
C249	ECST0GY226	22	
C255	ECUV1A474KBV	0.47	
C259	F1H0G4750001	47	
C267	ECST0JY226	22	
C270	ECST0JY475	4.7	
C274	ECUV1C104ZFV	0.1	
C280	ECUV1C104ZFV	0.1	
C283	ECUV1A105ZFV	1	
C290	ECUV1H102KBV	0.001	
C291	ECUV1H102KBV	0.001	
C294	ECUV1H103KBV	0.01	
C296	ECUV1C104ZFV	0.1	
C297	ECUV1C104ZFV	0.1	
C298	ECUV1A105ZFV	1	
		(OTHERS)	
E101	L0DACA000016	BUZZER	
E102	L0CBAB000044	MICROPHONE	
G1	PQJT10152Z	TERMINAL, CHARGE	
G3	PQJT10152Z	TERMINAL, CHARGE	
G4	PQJT10152Z	TERMINAL, CHARGE	
G6	PQJT10152Z	TERMINAL, CHARGE	
X201	PQVCI4096N3Z	CRYSTAL OSCILLATOR	

26.3. Charger

26.3.1. Cabinet and Electrical Parts

Ref. No.	Part No.	Part Name & Description	Remarks
1	PQLV30016ZS	CHARGE ASSEMBLY	
1-1	PQGG10148Z1	GRILLE	ABS-HB
1-2	PQKM10567Z1	CABINET BODY	PS-HB
1-3	PQHR10936Z	SPACER, LED LENS	PS-HB
1-4	PQJT10174Z	CHARGE TERMINAL	
1-5	PQKE10126Z1	CASE, CHARGE TERMINAL	POM-HB
1-6	PQQT22471Z	LABEL, CHARGE	
1-7	PQYF10551Z1	CABINET COVER	PS-HB
1-8	PQMH10457Z	WEIGHT	
1-9	PQHE10135Z	SPACER	

26.3.2. Main P.C. Board Parts

Ref. No.	Part No.	Part Name & Description	Remarks
PCB1	PQWPTGA270SH	MAIN P.C.BOARD ASS'Y (RTL)	
		(IC)	
IC1	C0CAAHG00013	IC	
		(TRANSISTORS)	
Q1	2SA933	TRANSISTOR(SI)	S
Q2	2SD2136	TRANSISTOR(SI)	
Q3	2SD1991A	TRANSISTOR(SI)	
Q4	2SA933	TRANSISTOR(SI)	S
Q5	DTC143EA	TRANSISTOR(SI)	S
		(DIODES)	
D2	PQVDS5688G	DIODE(SI)	S
LED1	LNJ201LPQJA	LED	
		(JACK)	
CN1	PQJJ1B4Y	JACK	S
		(RESISTORS)	
R1	ERDS2TJ222	2.2k	
R2	ERDS2TJ223	22k	
R3	ERDS2TJ101	100	
R4	ERDS2TJ6R8	6.8	
R5	ERDS2TJ103	10k	
R6	ERDS2TJ102	1k	
R7	ERDS2TJ4R7	4.7	
R8	ERDS2TJ332	3.3k	
R9	ERDS2TJ6R8	6.8	
R10	ERDS2TJ000	0	
R11	ERDS2TJ000	0	
		(CAPACITORS)	
C1	ECEA1HKS010	1	
C2	ECEA1HKS010	1	

26.4. Accessories and Packing Materials

Ref. No.	Part No.	Part Name & Description	Remarks
A1	PQLV10Z	AC ADAPTOR (for Base Unit)	⚠
A2	KX-TCA1-G	AC ADAPTOR (for Charger)	⚠
A3	PQJA10075Z	CORD, TELEPHONE	
A4	PFJA04C001Z	CORD, HANDSET	
A5	PQKE10127Z3	HANGER, BELT CLIP	ABS-HB
A6	PQJXF0621Z	HANDSET	
A7	PQQV10308Z	CARD, CCP	
A8	PQQW12660Z	QUICK GUIDE (for English)	
A9	PQQW12661Z	QUICK GUIDE (for Spanish)	
A10	PQQX13383Z	INSTRUCTION BOOK	
A11	PQQW12560Z	LEAFLET	
A12	PQXDDS400-8	LABEL, SECURITY TAG	
P1	XZB26X35A06	PROTECTION COVER (for Base Unit)	
P2	XZB08X30A04	PROTECTION COVER (for Cordless Handset)	
P3	XZB15X25A04	PROTECTION COVER (for Charger)	
P4	PQPN11692X	ACCESSORY BOX	
P5	PQPK13753X	GIFT BOX	
P6	PQPD10545Z	CUSHION	
P7	PQPD10543Z	CUSHION	
P8	PQPD10546Z	CUSHION	

27. FOR SCHEMATIC DIAGRAM

27.1. Base Unit

Notes:

1. **DC voltage measurements are taken with voltmeter from the negative voltage line.**

> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacturer's specified parts.

2. **The schematic diagrams and circuit board may be modified at any time with the development of new technology.**

27.2. Cordless Handset

Notes:

1. **DC voltage measurements are taken with an oscilloscope or a tester with a ground.**
2. **The schematic diagrams and circuit board may be modified at any time with the development of new technology.**

28. SCHMATIC DIAGRAM (RF Unit)

29. SCHEMATIC DIAGRAM (Base Unit)

29.1. Main

29.2. Operation

30. SCHEMATIC DIAGRAM (Cordless Handset)

30.1. Main

31. SCHEMATIC DIAGRAM (Charger)

32. CIRCUIT BOARD (RF Unit)

33. CIRCUIT BOARD (Base Unit)

33.1. Main

33.1.1. Component View

33.1.2. Flow Solder Side View

33.2. Operation

33.3. MEMO

34. CIRCUIT BOARD (Cordless Handset)

34.1. Main

34.1.1. Component View

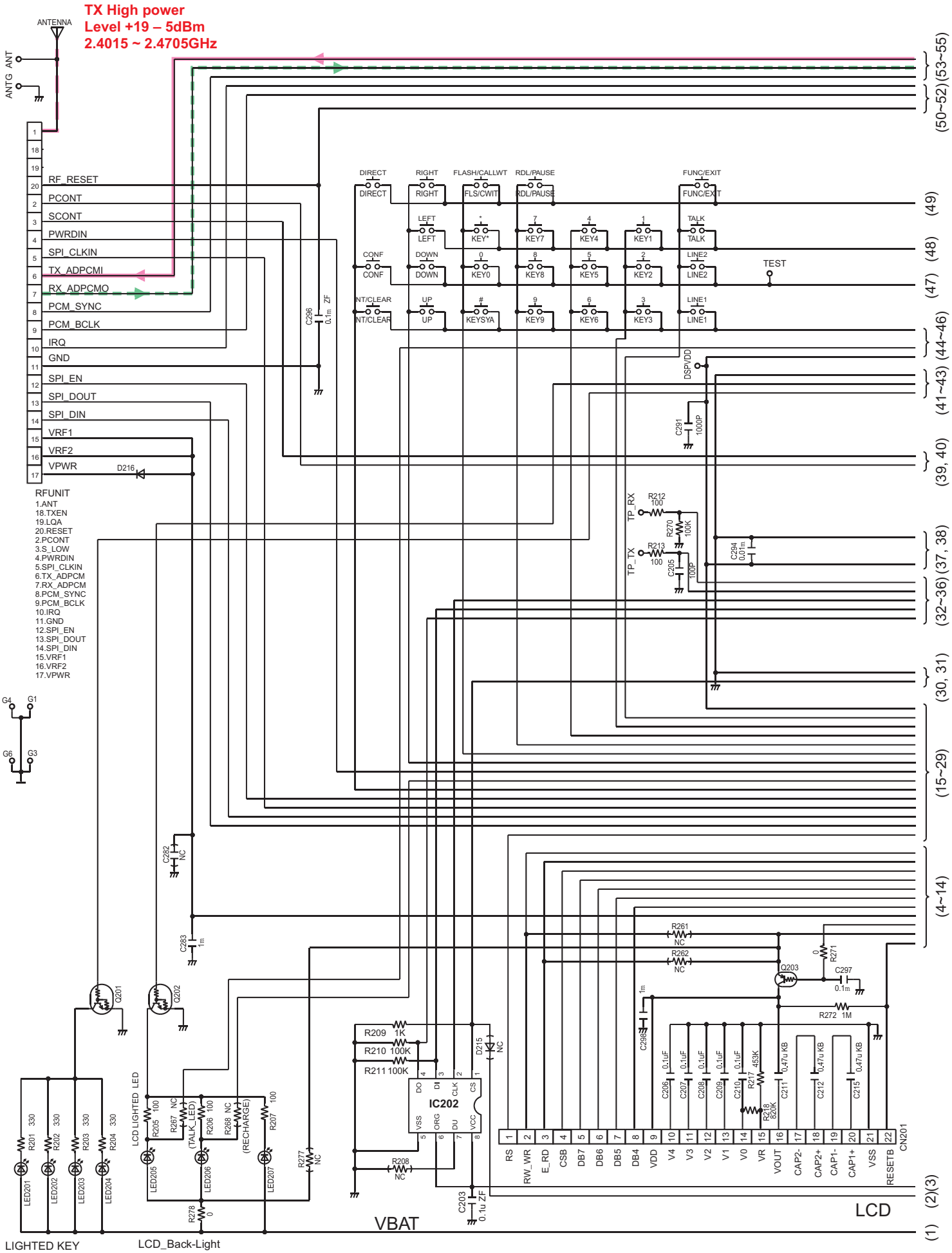
34.2. Flow Solder Side View

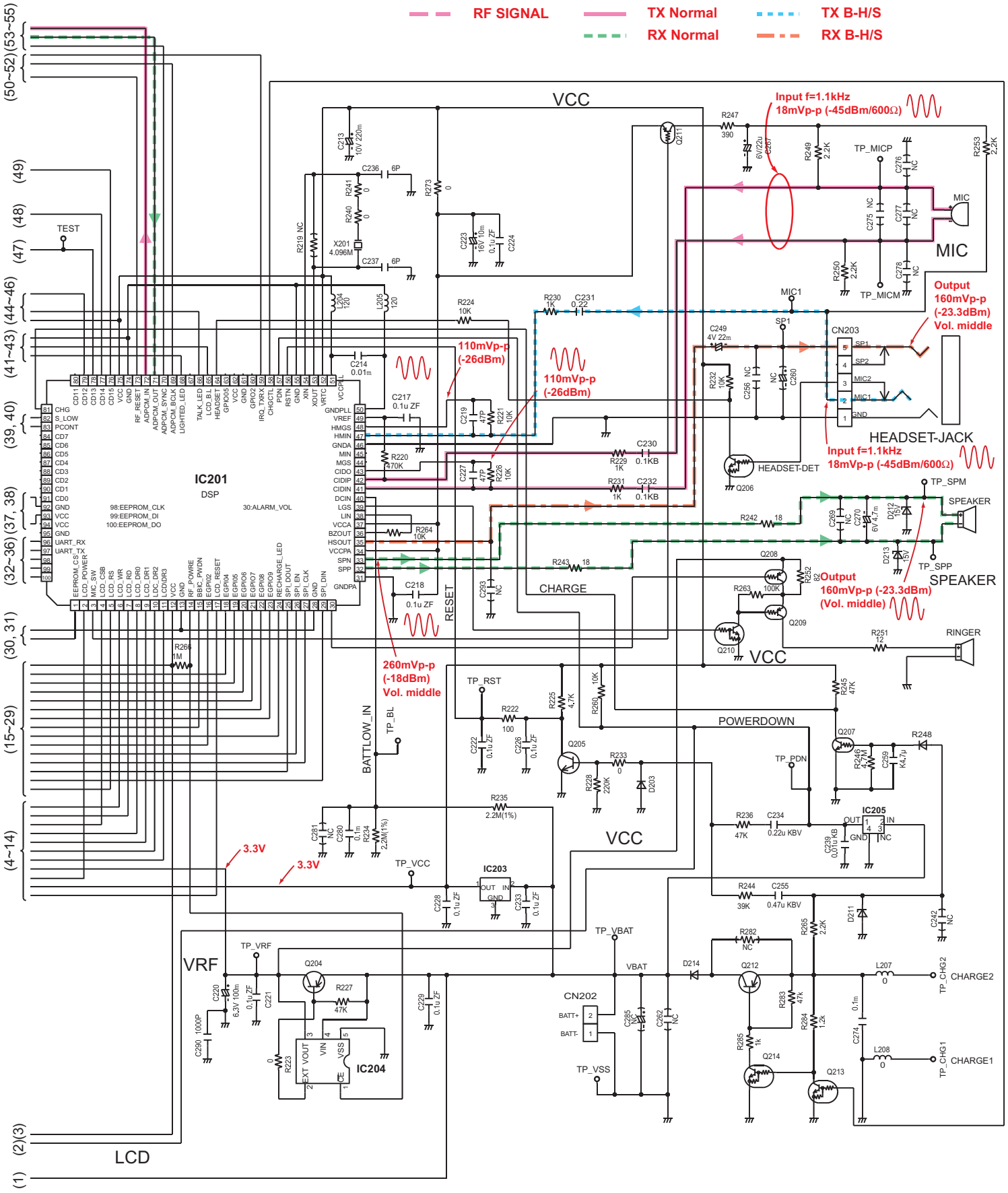
35. CIRCUIT BOARD (Charger)

35.1. Component View

35.2. Flow Solder Side View

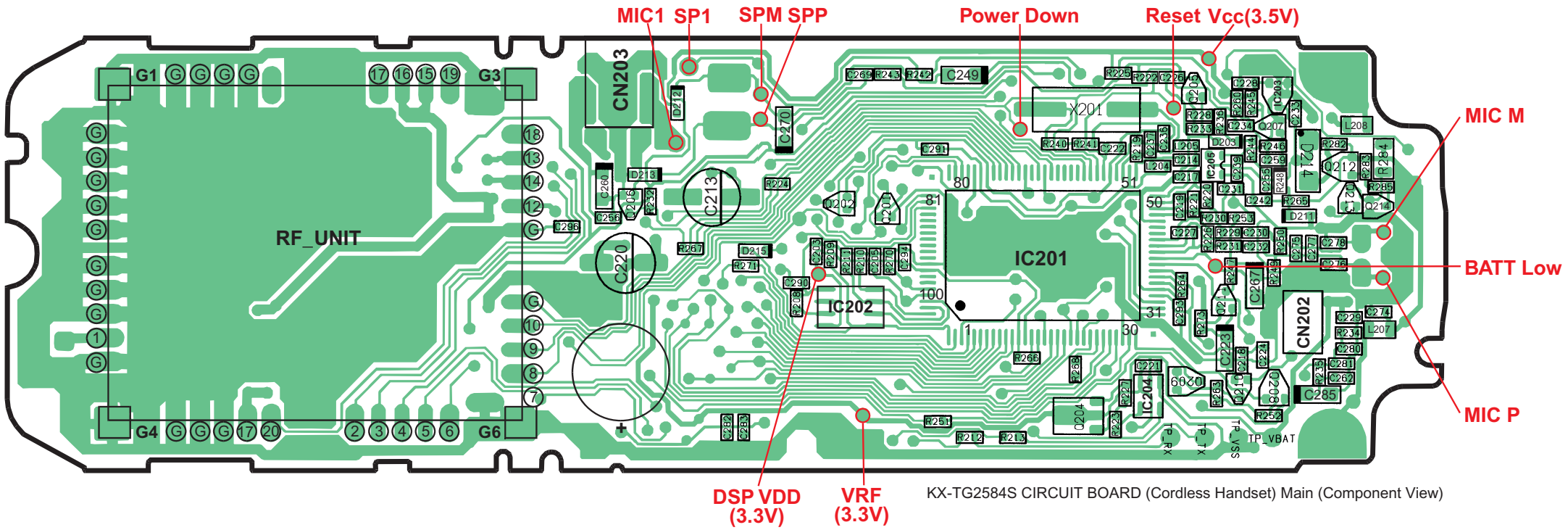
M / KXTG2584S


TX High power
Level +19 – 5dBm
2.4015 ~ 2.4705GHz
ANTENNA
ANT
G ANT
RF_RESET
PCONT
SCONT
PWRDIN
SPI_CLKIN
TX_ADPCMI
RX_ADPCMO
PCM_SYNC
PCM_BCLK
IRQ
GND
SPI_EN
SPI_DOUT
SPI_DIN
VRF1
VRF2
VPWR
D216
RFUNIT
1.ANT
18.TXEN
19.LQA
20.RESET
2.PCONT
3.S_LOW
4.PWRDIN
5.SPI_CLKIN
6.TX_ADPCM
7.RX_ADPCM
8.PCM_SYNC
9.PCM_BCLK
10.IRQ
11.GND
12.SPI_EN
13.SPI_DOUT
14.SPI_DIN
15.VRF1
16.VRF2
17.VPWR
DIRECT
RIGHT
FLASH/CALLWT
RDL/PAUSE
FUNC/EXIT
LEFT
CONF
DOWN
NT/CLEAR
UP
KEY*
KEY0
KEYSYA
KEY7
KEY8
KEY9
KEY4
KEY5
KEY6
KEY1
KEY2
KEY3
TALK
LINE2
LINE1
TEST
C296
ZF
0.1m
DSPVDD
C291
1000P
TP_RX
TP_TX
R212
100
R270
100K
R213
100
C205
100P
C294
0.01m
C282
NC
C283
1m
Q201
Q202
G4
G1
G6
G3
R209
1K
R210
100K
R211
100K
IC202
DO
DI
CLK
CS
VSS
ORG
DU
VCC
D215
NC
R208
NC
C203
0.1u ZF
VBAT
LCD LIGHTED LED
R205
100
R267
NC
(TALK_LED)
R206
100
R268
NC
(RECHARGE)
R207
100
LED205
LED206
LED207
R277
NC
R278
0
R201
330
R202
330
R203
330
R204
330
LED201
LED202
LED203
LED204
LIGHTED KEY
LCD_Back-Light
R261
NC
R262
NC
Q203
R271
0
C297
0.1m
R272
1M
C298
1m
C206
0.1uF
C207
0.1uF
C208
0.1uF
C209
0.1uF
C210
0.1uF
R217
453K
R218
820K
C211
0.47u KB
C212
0.47u KB
C215
0.47u KB
CN201
RS
RW_WR
E_RD
CSB
DB7
DB6
DB5
DB4
VDD
V4
V3
V2
V1
V0
VR
VOUT
CAP2-
CAP2+
CAP1-
CAP1+
VSS
RESETB
LCD
(50~52)(53~55)
(49)
(47) (48)
(44~46)
(41~43)
(39, 40)
(37, 38)
(32~36)
(30, 31)
(15~29)
(4~14)
(1) (2)(3)

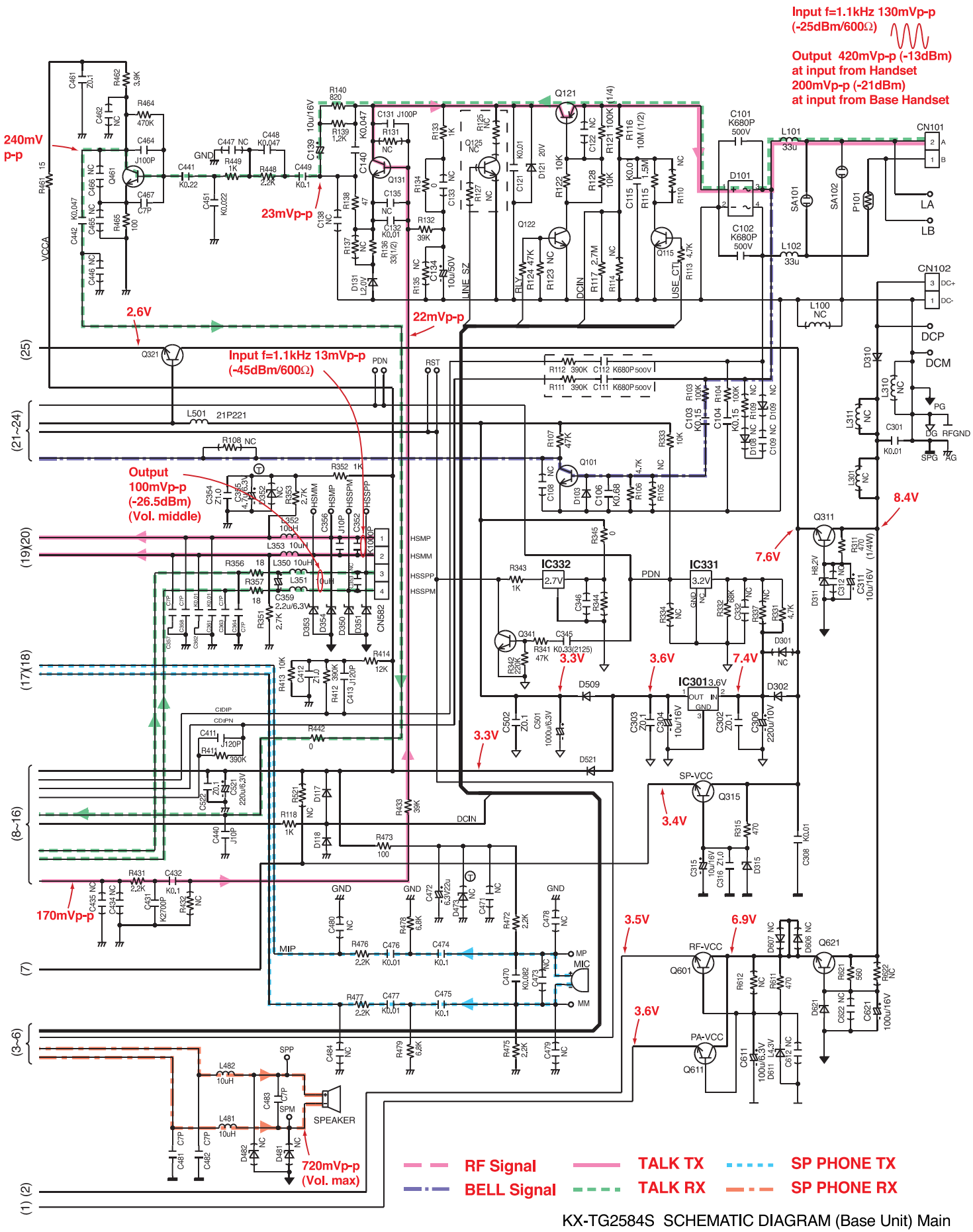


KX-TG2584S SCHEMATIC DIAGRAM (Cordless Handset) Main

KX-TG2584S CIRCUIT BOARD (Cordless Handset) Main (Flow Solder Side View)

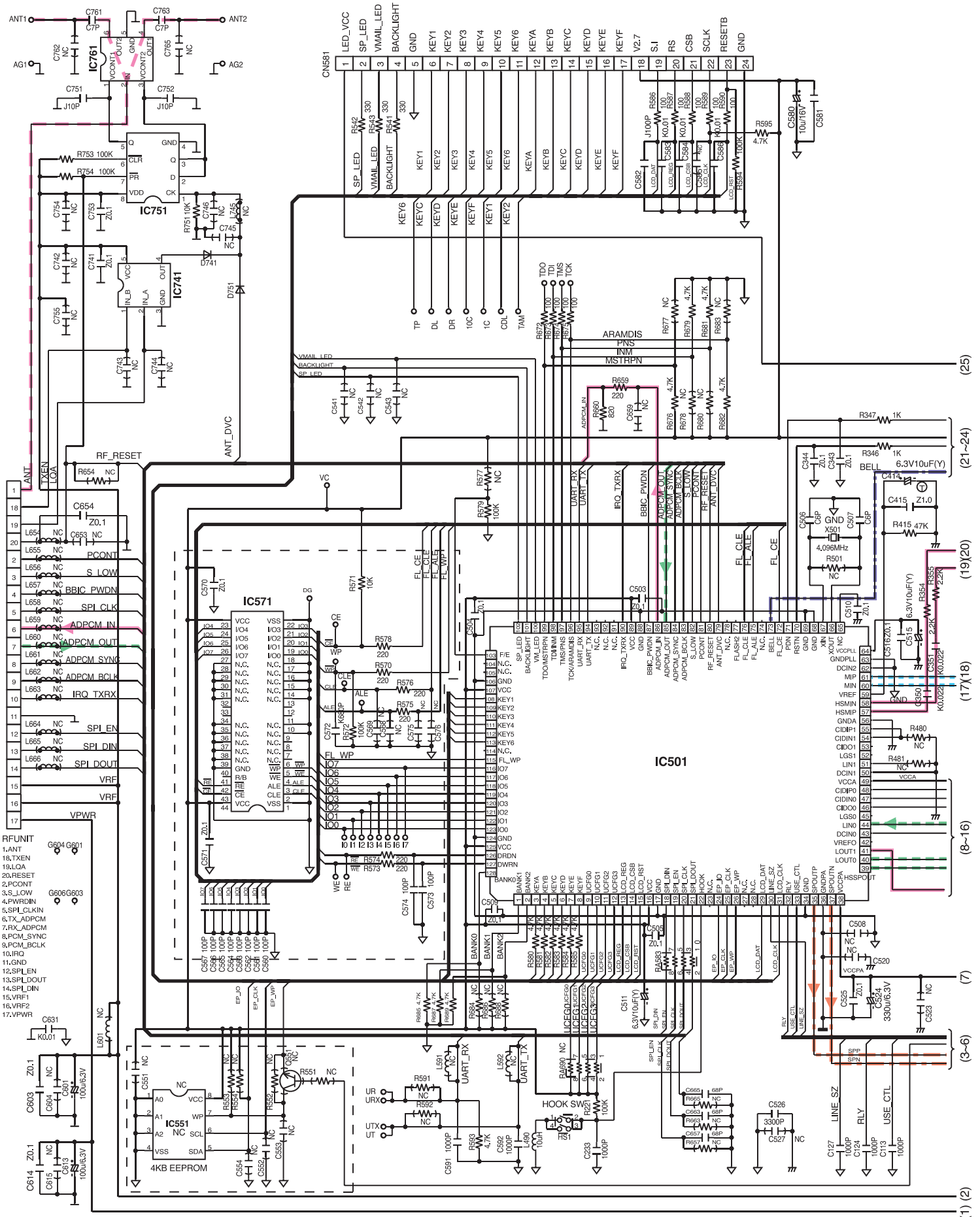


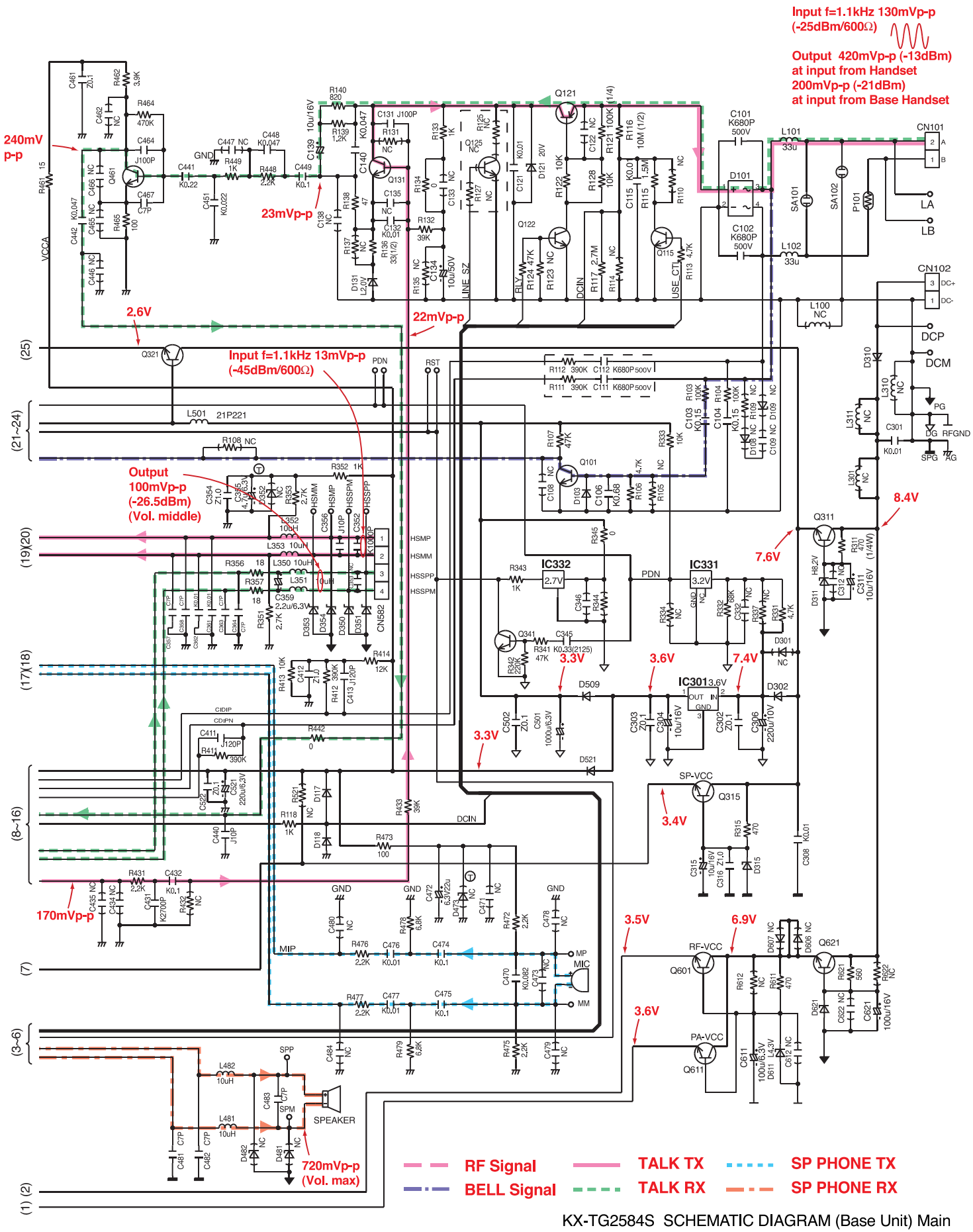
KX-TG2584S CIRCUIT BOARD (Cordless Handset) Main (Component View)



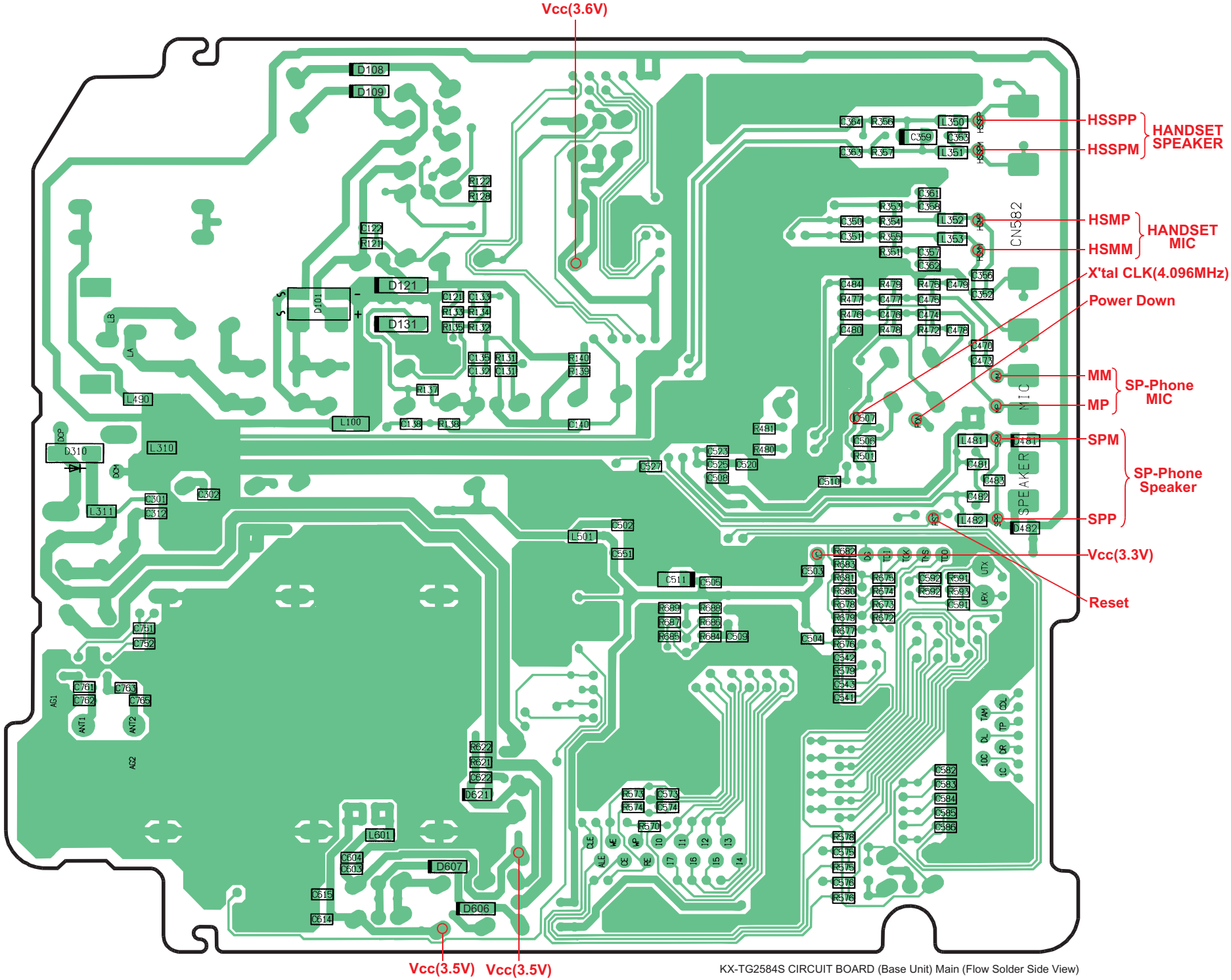
KX-TG2584S SCHEMATIC DIAGRAM (Base Unit) Main

TX High power Level +20 ± 5dBm
2.4015 ~ 2.4705GHz

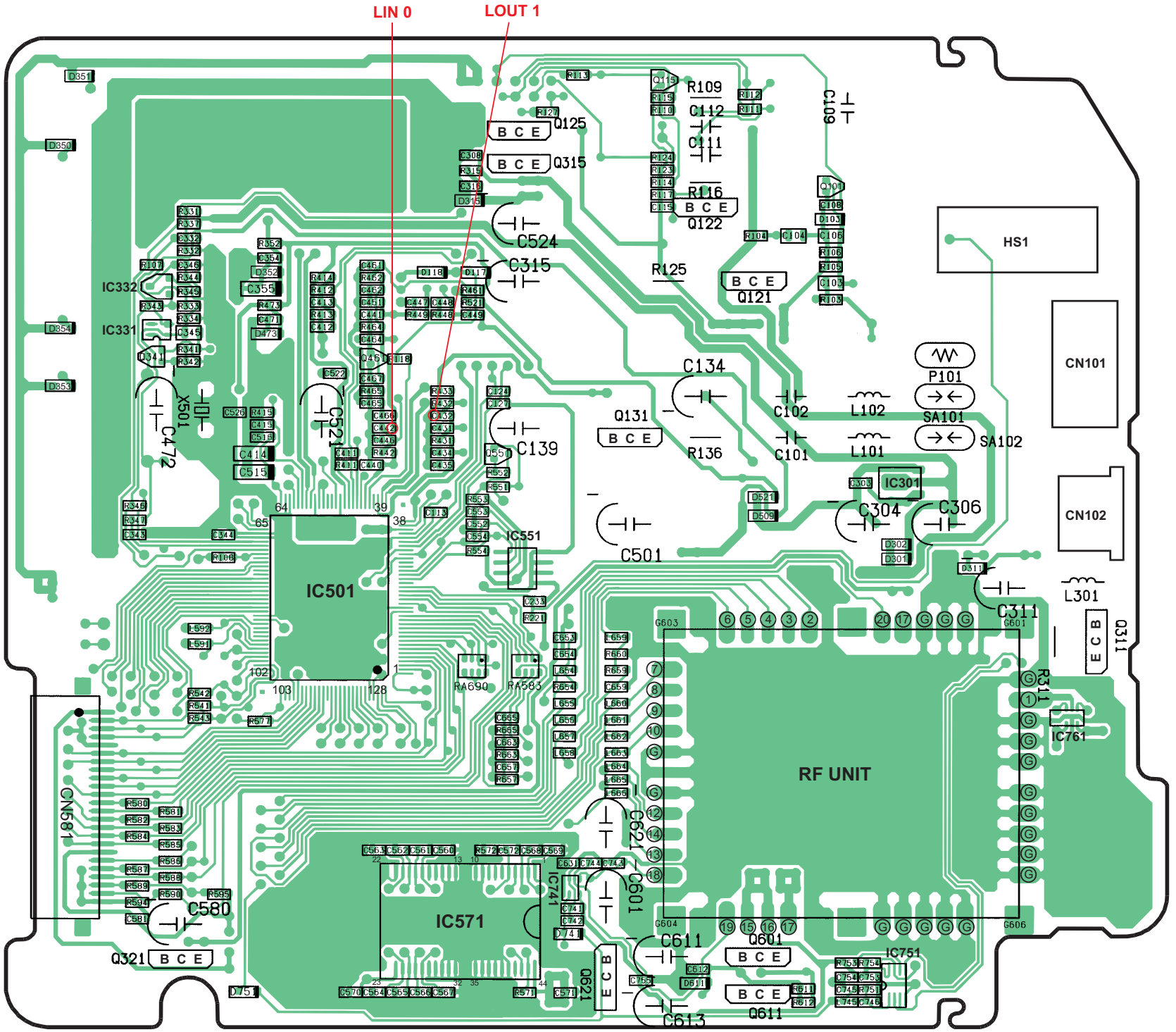




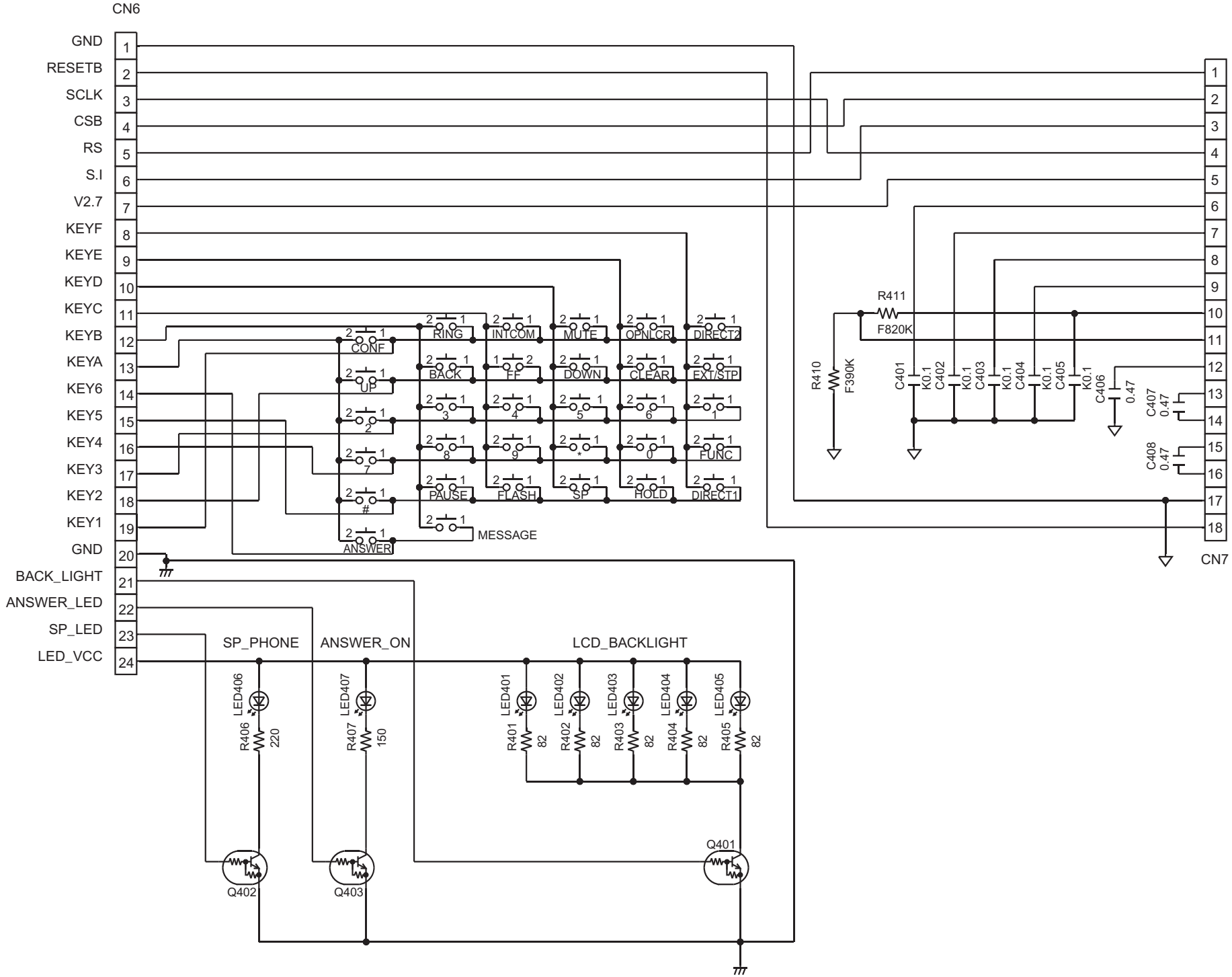
KX-TG2584S SCHEMATIC DIAGRAM (Base Unit) Main



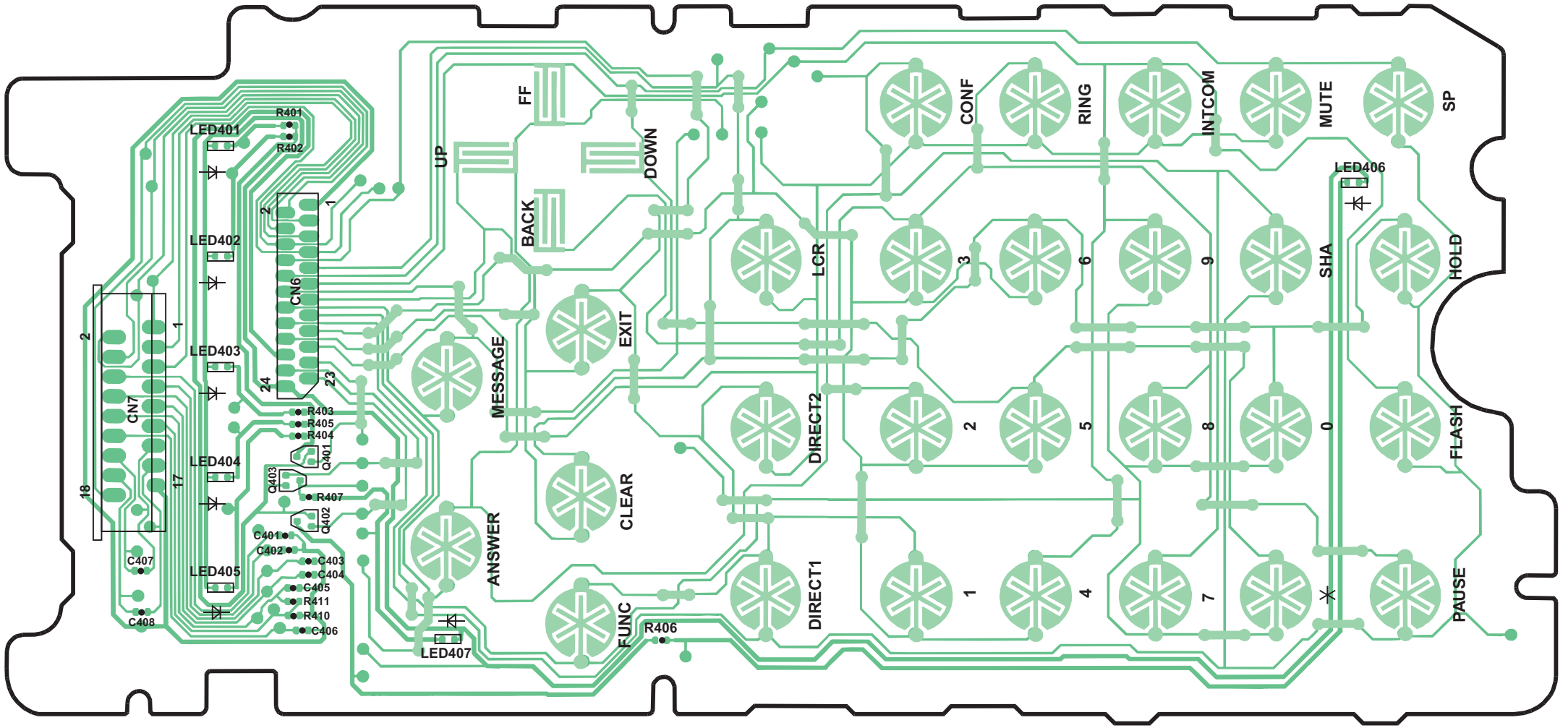
KX-TG2584S CIRCUIT BOARD (Base Unit) Main (Flow Solder Side View)



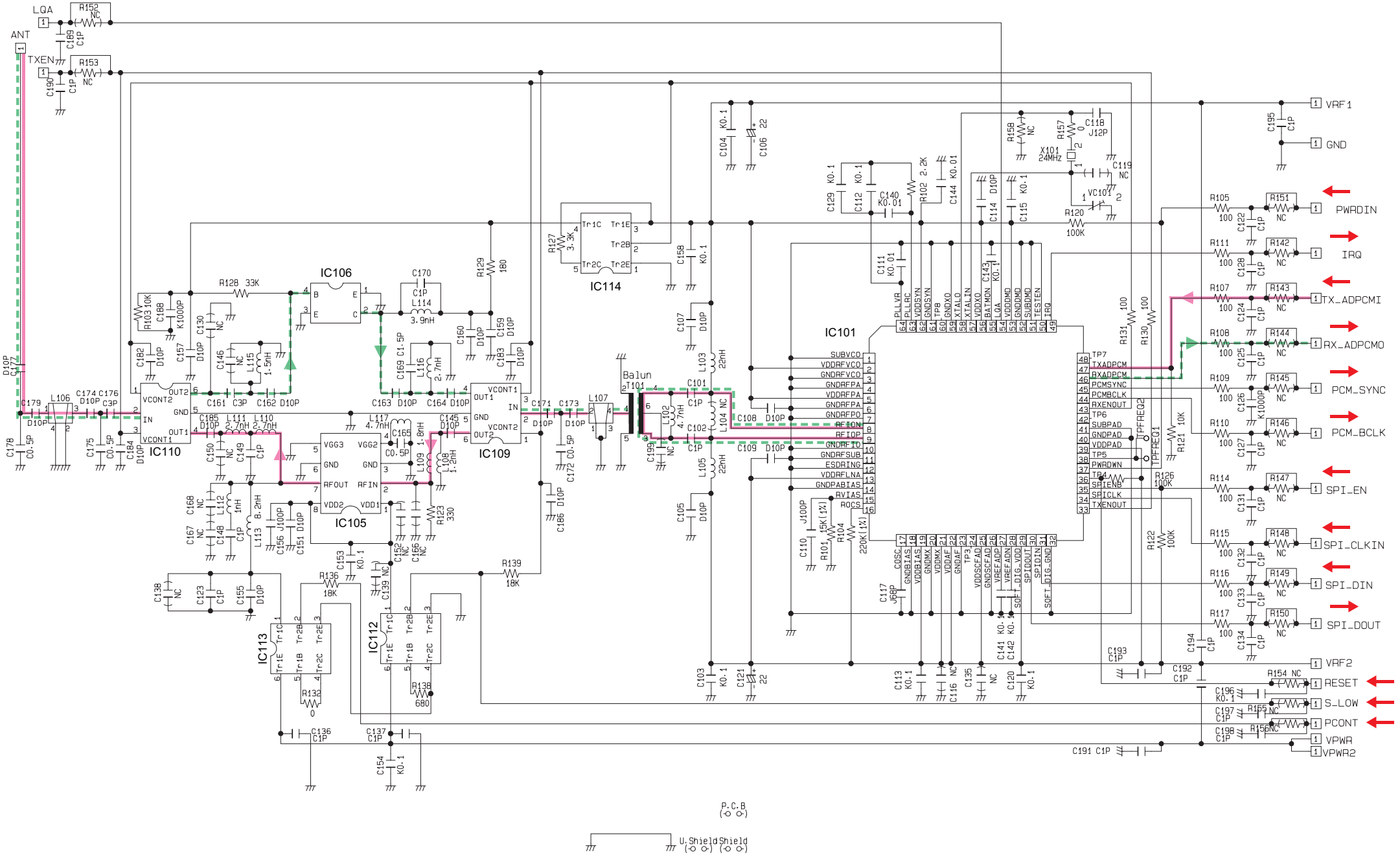
KX-TG2584S CIRCUIT BOARD (Base Unit) Main (Component View)

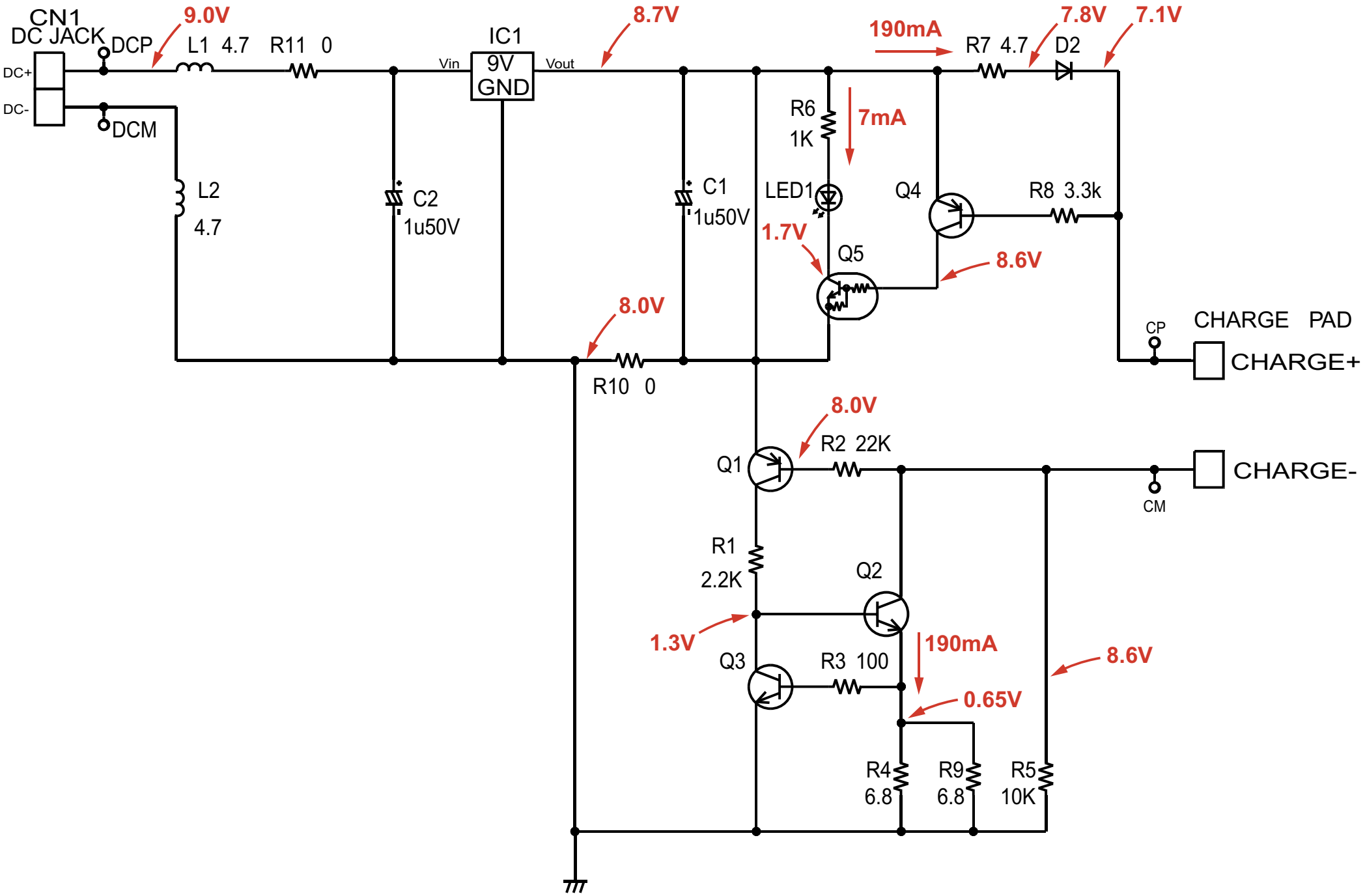


KX-TG2584S SCHEMATIC DIAGRAM (Base Unit) Operation

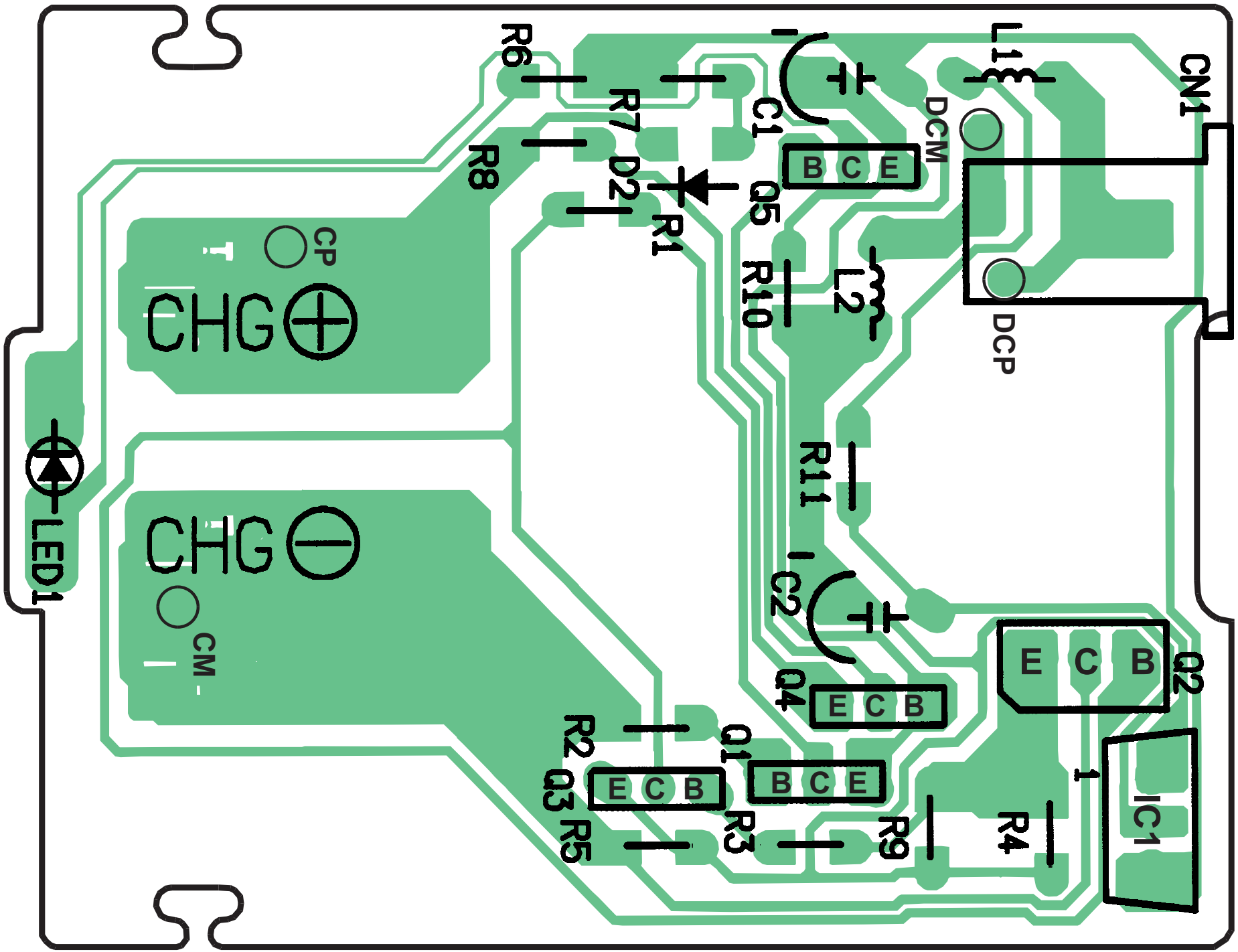


KX-TG2584S CIRCUIT BOARD (Base Unit) Operation


ANT
LQA
TXEN
IC101
IC105
IC106
IC109
IC110
IC112
IC113
IC114
Balun
X101
24MHz
VC101
TPFREQ01
VRF1
GND
VRF2
PWRDIN
IRQ
TX_ADPCMI
RX_ADPCMO
PCM_SYNC
PCM_BCLK
SPI_EN
SPI_CLKIN
SPI_DIN
SPI_DOUT
RESET
S_LOW
PCONT
VPWR
VPWR2
P.C.B
U.Shield
Shield

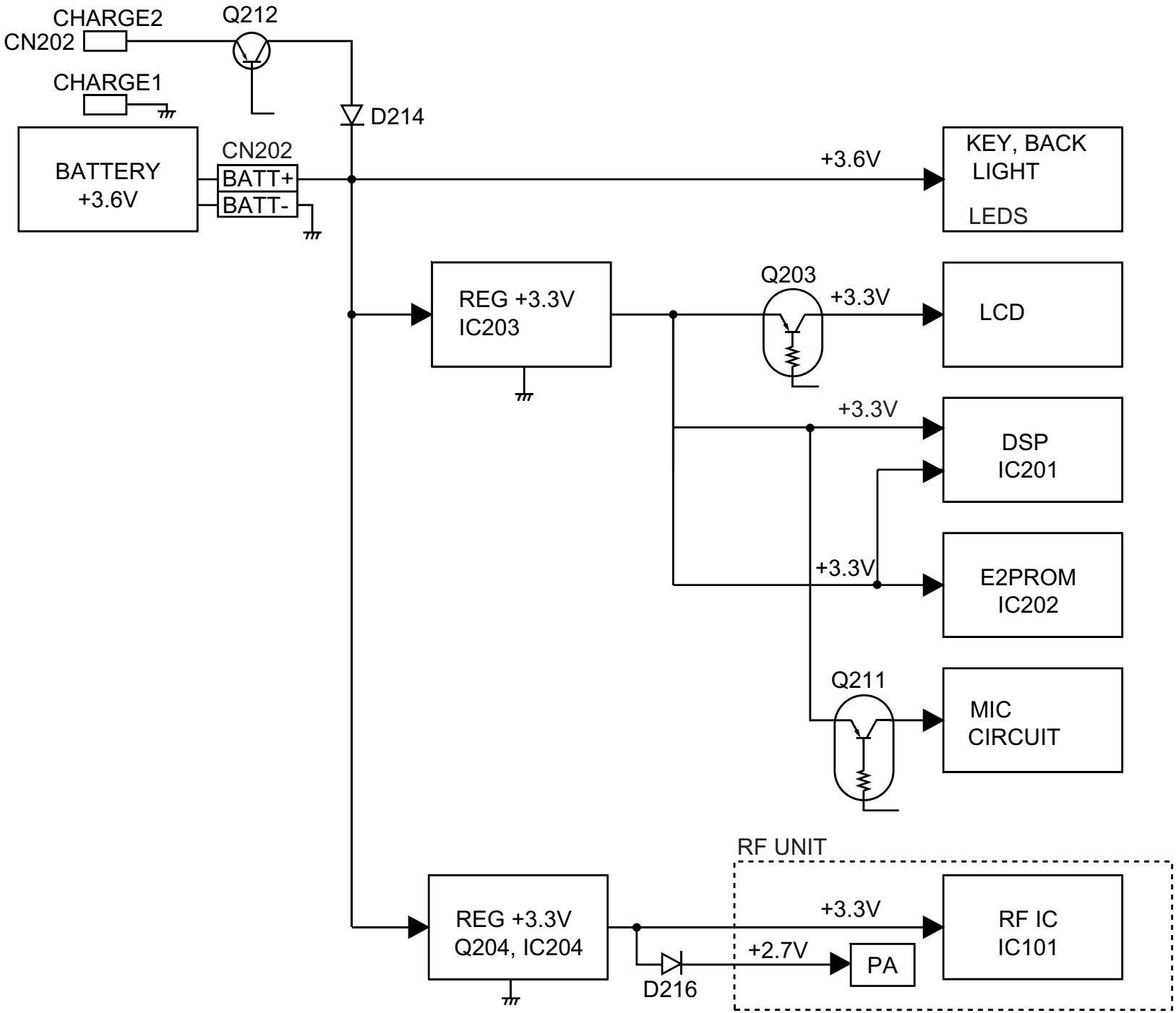


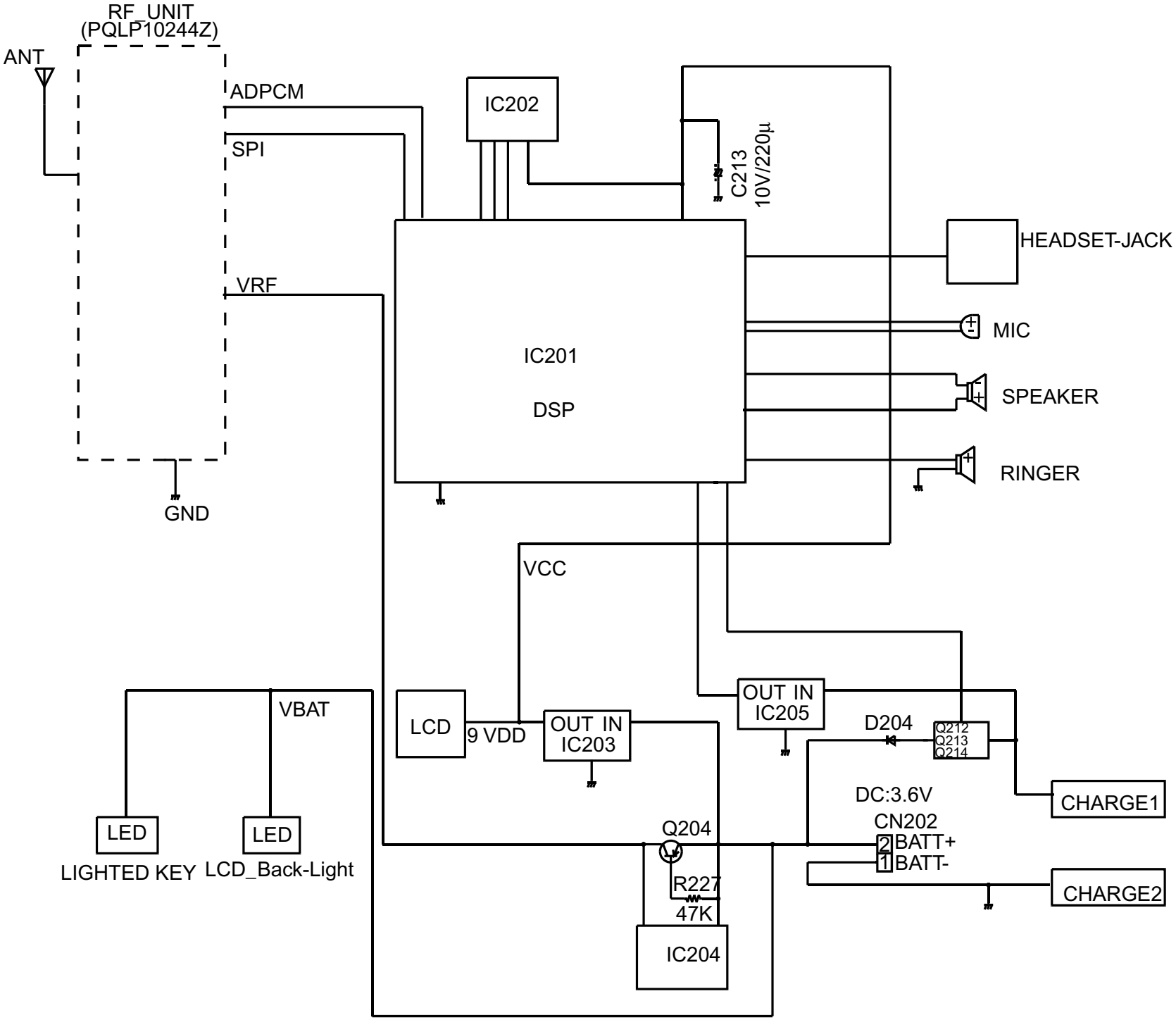
KX-TG2584S SCHEMATIC DIAGRAM (Charger)



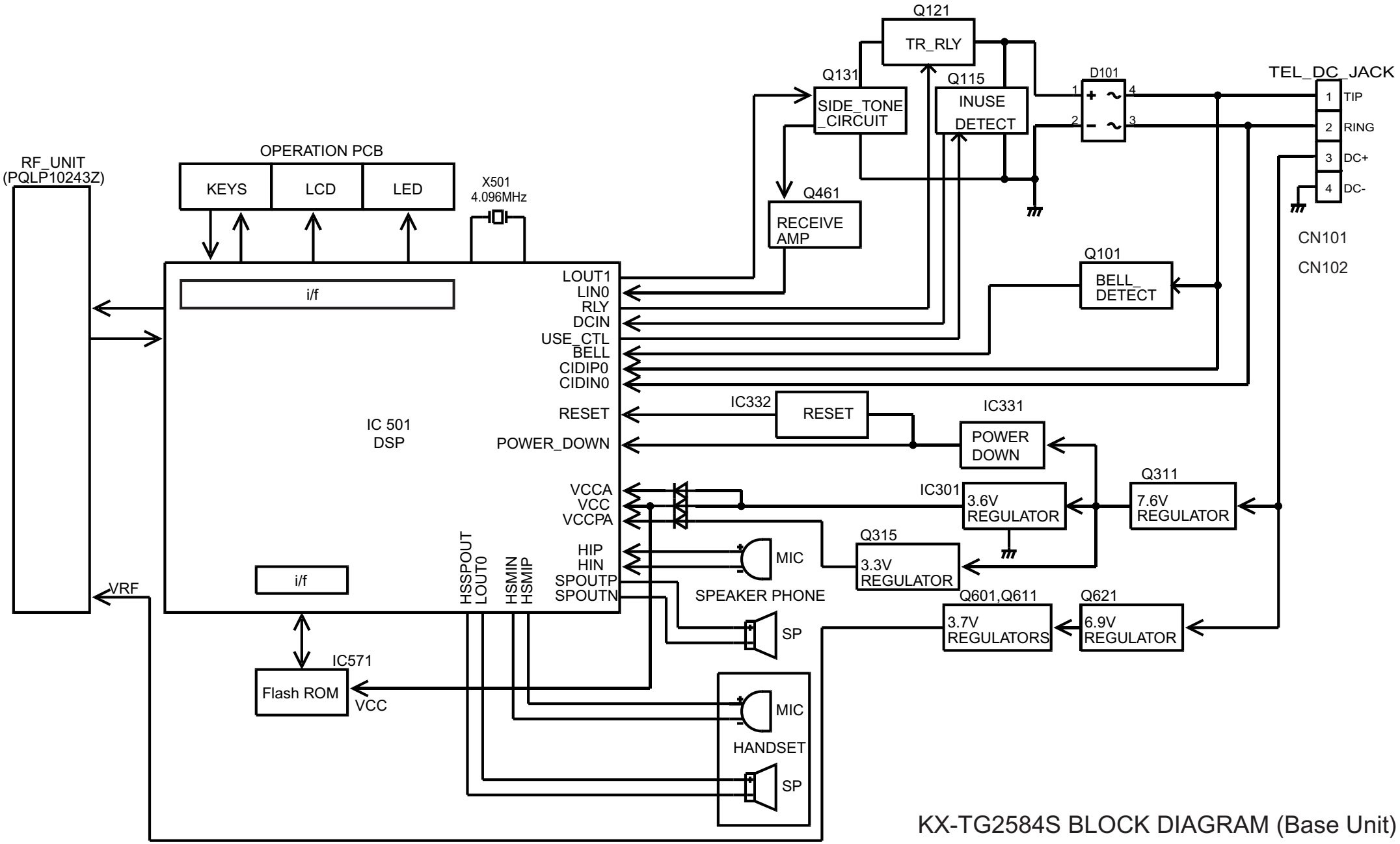
KX-TG2584S CIRCUIT BOARD (Charger) Component View

Block Diagram (Cordless Handset Power)

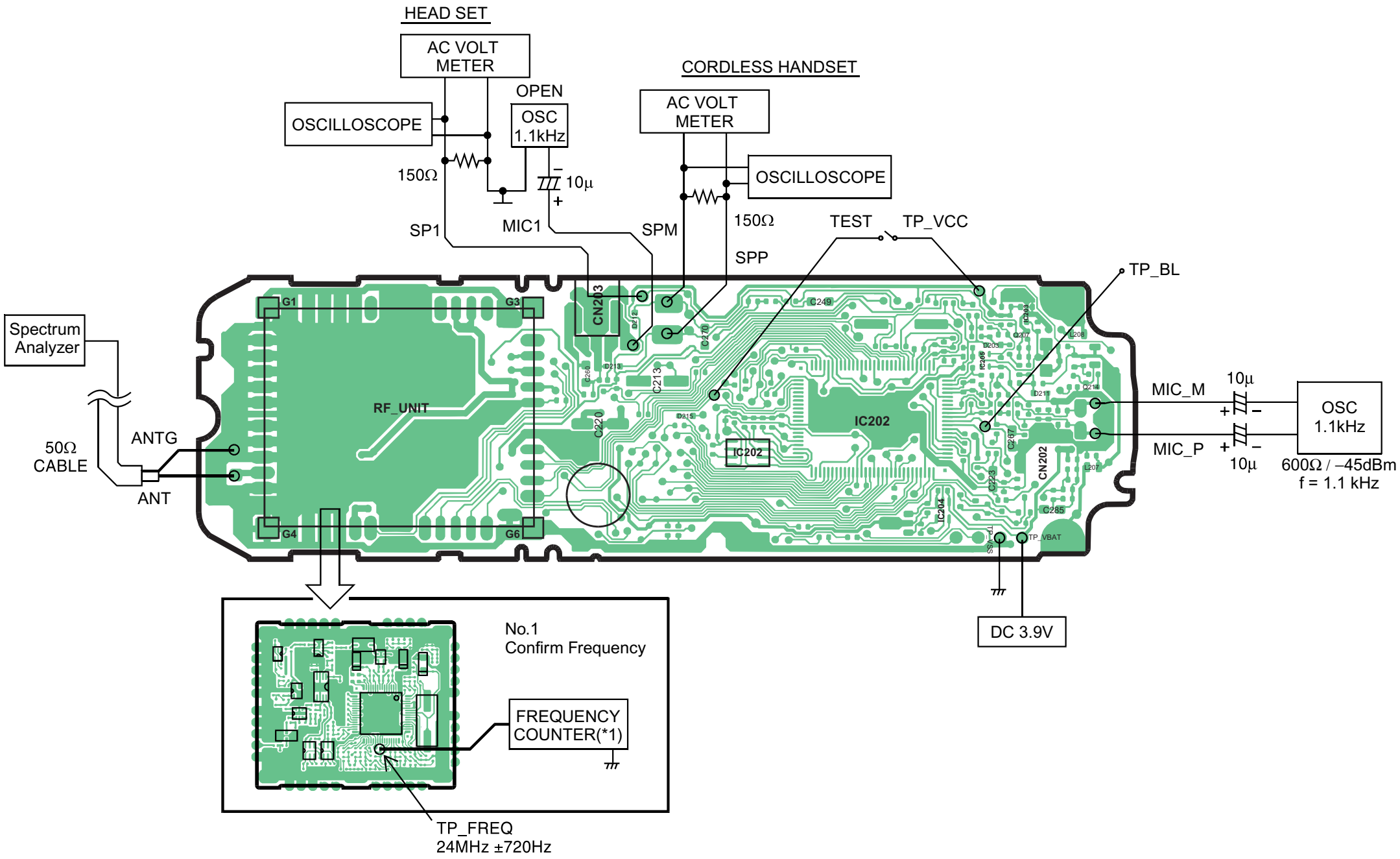


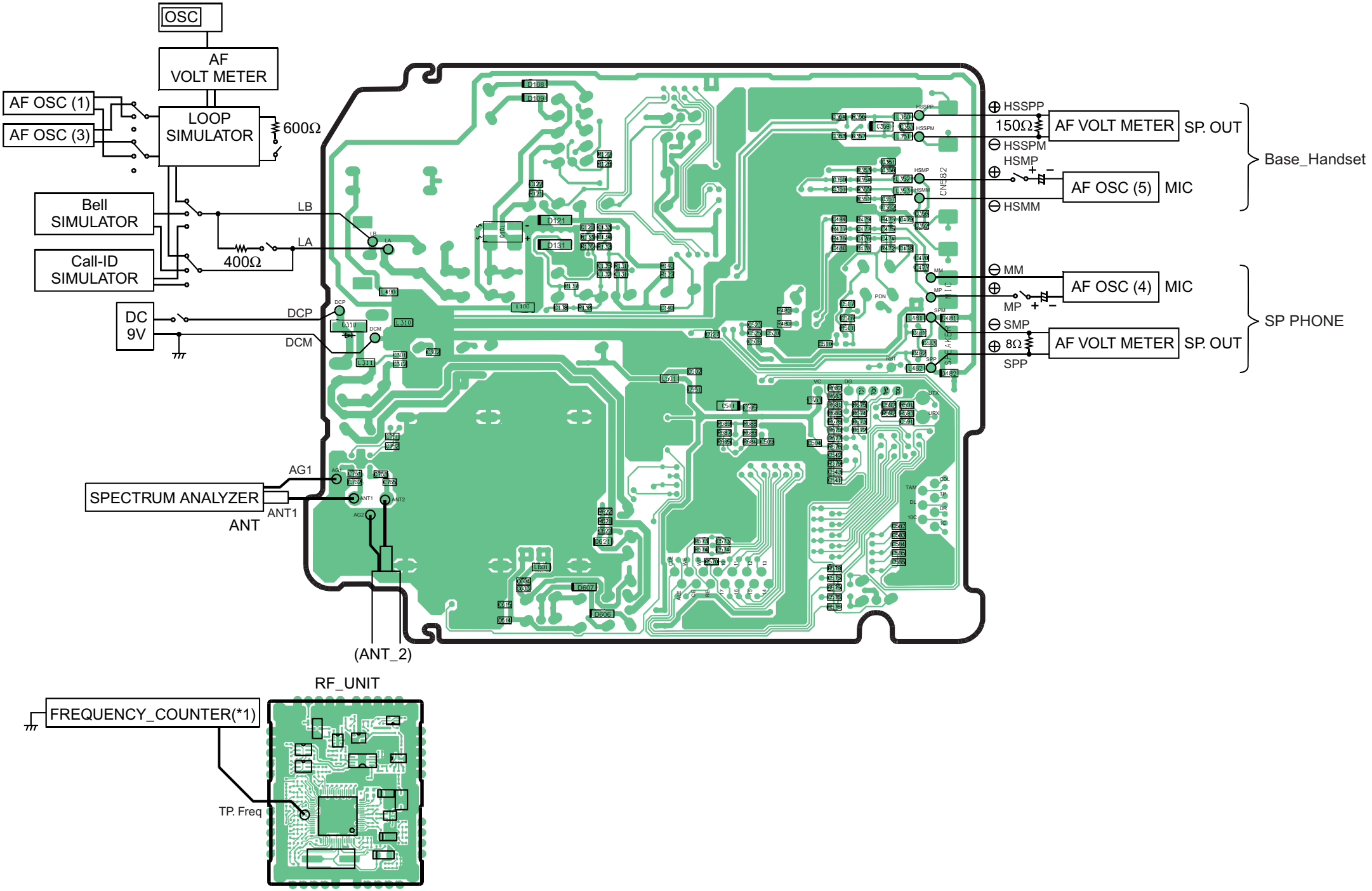


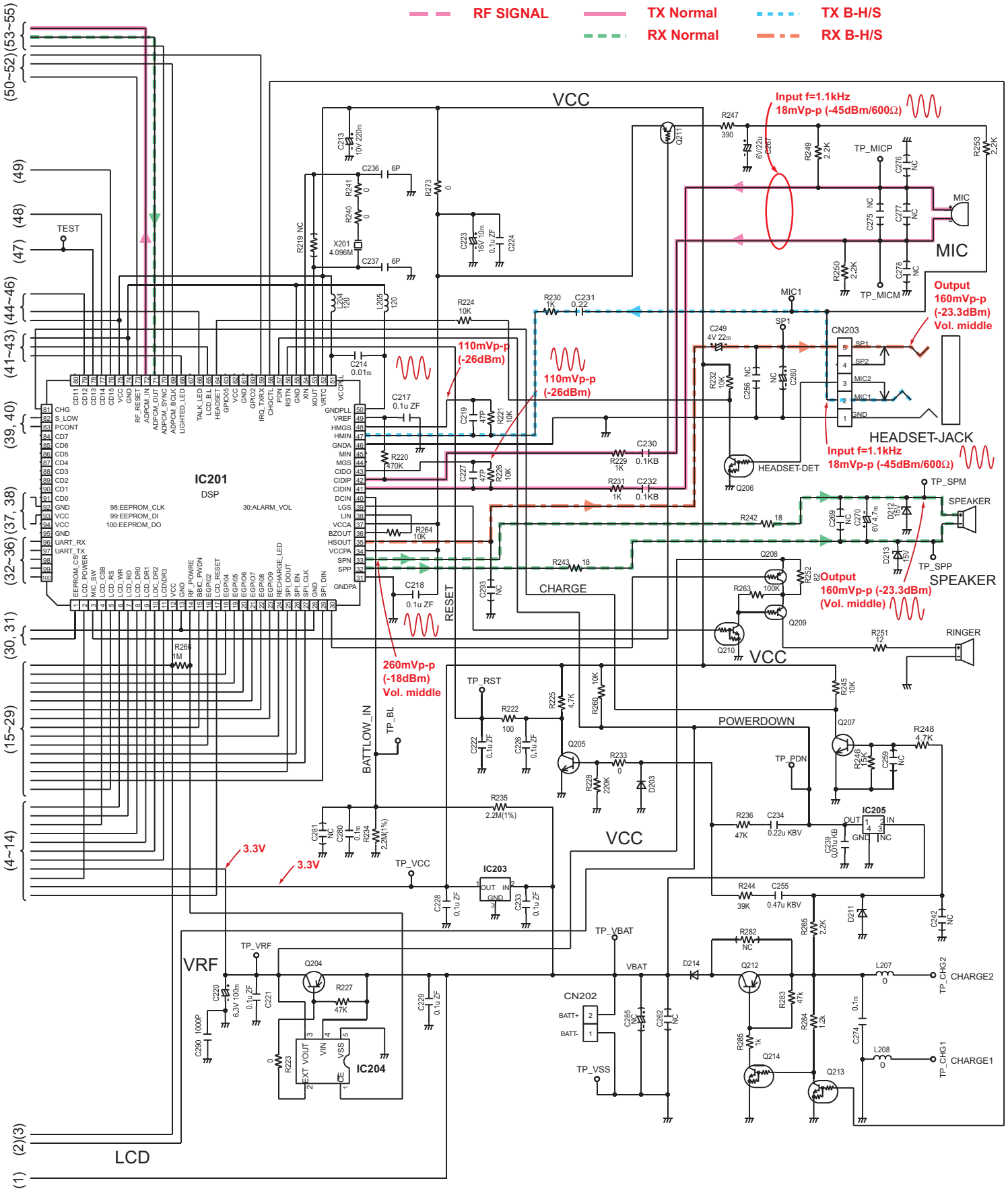
KX-TG2584S BLOCK DIAGRAM (Cordless Handset)



KX-TG2584S BLOCK DIAGRAM (Base Unit)


HEAD SET
AC VOLT METER
OSCILLOSCOPE
OPEN
OSC 1.1kHz
150Ω
10µ
SP1
MIC1
CORDLESS HANDSET
AC VOLT METER
OSCILLOSCOPE
150Ω
SPM
SPP
TEST
TP_VCC
TP_BL
Spectrum Analyzer
50Ω CABLE
ANTG
ANT
G1
G3
G4
G6
CN203
RF_UNIT
IC202
IC202
CN202
MIC_M
MIC_P
10µ
10µ
OSC 1.1kHz
600Ω / –45dBm
f = 1.1 kHz
DC 3.9V
No.1
Confirm Frequency
FREQUENCY COUNTER(*1)
TP_FREQ
24MHz ±720Hz


OSC
AF
VOLT METER
AF OSC (1)
AF OSC (3)
LOOP
SIMULATOR
600Ω
Bell
SIMULATOR
Call-ID
SIMULATOR
LB
LA
400Ω
DC
9V
DCP
DCM
AG1
SPECTRUM ANALYZER
ANT1
ANT
(ANT_2)
RF_UNIT
FREQUENCY_COUNTER(*1)
TP. Freq
HSSPP
150Ω
HSSPM
AF VOLT METER
SP. OUT
HSMP
AF OSC (5)
MIC
HSMM
Base_Handset
MM
AF OSC (4)
MIC
MP
SMP
8Ω
AF VOLT METER
SP. OUT
SPP
SP PHONE



KX-TG2584S SCHEMATIC DIAGRAM (Cordless Handset) Main